FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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CONTENTS.

	PAGE
Editorial Comment:	
The King and Military Aviation	1083
Pegoud—and Others	1083
Men of Moment in the World of Flight: M. E. Pegoud and M. Louis Blériot	1085
Pegoud and his Flights	1086
Aeroplane Types: The Sykorsky Biplane	1089
Royal Aero Club: Official Notices	1090
Natural Flight	1092
The First International Air Contest at Hendon	1094
From the British Flying Grounds...	1096
The Wight Seaplane	1098
Armchair Reflections. By The Dreamer	1099
Prohibited Areas in Germany	1100
British Notes of the Week	1101
Foreign Aviation News	1102
The Rheims Meeting and Gordon-Bennett Trophy	1103
Models. Edited by V. E. Johnson, M.A.	1105
Model Clubs. Diary and Monthly Reports	1106
Correspondence	1108

EDITORIAL COMMENT.

The King and Military Aviation.

While we should be the very first to deprecate the use of the name of His Majesty the King in order to give weight to the enunciation of a line of argument, we nevertheless cannot refrain from expressing our satisfaction at the note struck by His Majesty when addressing the conference called by the Chief of the General Staff at the conclusion of the recent Army manœuvres.

"I am glad to notice a considerable increase in the number of aircraft as compared with last year, and to note that efforts are being made to widen the scope of the Royal Flying Corps and to enable it to gain experience in working in close connection with mobile troops." The words were not many, but they are significant of the deeply observant interest which His Majesty takes in all matters connected with the defence of these realms. From them we gather that King George has a full appreciation of the immense potential value of aircraft and the enormous influence they must possess on the destinies of the wars of the future. It needs hardly saying that such a realisation on the part of the Sovereign must mean that his advisers have become imbued with the same convictions, and thus we get to the point at which it is possible to express more faith in the future of British military aviation than we have been able to feel hitherto. Not that we are able to feel that the authorities are doing all that might be done. In our judgment they are not, for there can be no question but that, great as has been the progress of the current year, we are still a very long way behind our rivals in the air. Still, it is inevitably a long road from realisation to accomplishment, but if there is realisation at last, then it can be said that we are getting within sight of the other. In other words, if the military authorities have at last awakened to a full appreciation of the fact that without aircraft, and aircraft in sufficient numbers, an army in the field is no better than a mole, groping in underground darkness, then we have certainly proceeded over a long stage of the road whose goal is efficiency. For whatever may be our opinions as to the ultra-conservative mental processes of the authorities, which prevent them from reaching conclusions until long after the proposition has been accepted by others, we have at least that measure of faith in them which impels us to believe that directness of purpose characterises their methods when once the decision has been reached. Therefore, we feel more hopeful for the future.

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Pegoud—and Others.

For the past week the whole world has been talking of nothing but Pegoud and his wonderful flying. That is scarcely to be wondered at when we consider that he has been doing things in the air which were commonly believed, even by accomplished aviators, to be utterly impossible. He has disproved many accepted theories, and has demonstrated that others were correct in their application. Moreover, he has been the first to perform certain feats which were undoubtedly dangerous when regarded in the light of the knowledge we possessed before he showed that there was actually no danger in them provided always that nothing happened to the machine or the nerves of the aviator. Secure in his confidence in himself and his machine, he has done what almost any practised aviator would have told him meant a short way to suicide. What he has really done is to prove that the aeroplane, provided its controller has nerve and knowledge enough to know when

to leave things alone, is an absolutely safe and stable machine in the air. To that extent, therefore, he has added to the sum total of our knowledge of the conditions and dynamics of flight, and beyond doubt his contribution in this respect is an immensely valuable one. So much for that aspect of the matter.

Now, it is inevitable that others will follow along the lines Pegoud has indicated, and we think they will rightly follow since it is only by experiment that we can learn. It is no use blinking the fact that there is danger to the novice in these performances, but Pegoud has shown us that given the essentials we have set forth, that danger is a relatively minor quantity. But evolutions such as those we have been witnessing at Brooklands during last week-end are not to be lightly undertaken by everyone, nor do we think that they should be undertaken, even by tried and skilful aviators, simply as "circus stunts." Anything of the sort we should strongly deprecate, since we do not believe that the kind of spectacle it involves is good either for the public which witnesses it, or for those who undertake it, or for the movement as a whole. Holding these views, then, it is very gratifying to hear that Mr. Hamel, who has announced amongst others that he intends to emulate the performance of Pegoud, proposes to carry out his experiments privately. Therein, we think, he shows the true spirit of research in place of the unwholesome seeking after notoriety which, for a variety of reasons, is of no use to the movement and its future development.

It has been asked if the Royal Aero Club intends to place its prohibition on such feats as those we are discussing. For our own part we should be sincerely sorry if the Club did anything of the kind, always supposing that experiment and consequently development is at the bottom of things. To our way of thinking, the Club is in rather a difficult position regarding these freak—we use the word for want of a better—flights. On the one hand, nothing must be done which will in any way interfere with progress, but on the other the public looks to the Club to put its foot down upon exhibitions that are obviously dangerous. But after what we have seen Pegoud doing, who is to define what is dangerous and what is not? It was only recently that a Russian military flying officer got into serious trouble for putting to the test one at least of the self-same theories which Pegoud has so triumphantly demonstrated to be not only correct in themselves but safe in their execution. The fact is that the absolutely unsafe of to-day is the entirely safe of to-morrow, and at that we must be content to leave it for the time being, trusting in the meantime to the good sense of our ambitious aviators to keep within those bounds which will preclude the necessity of interference which could only be distasteful to the ruling body to impose, and detrimental to the development of the science.

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THE ROYAL FLYING CORPS.

The following appointment was announced in the *London Gazette* of the 19th ult.:—

R.F.C.—Military Wing.—*Special Reserve of Officers.*—Second Lieut. (on probation) Lionel S. Metford is confirmed in his rank.

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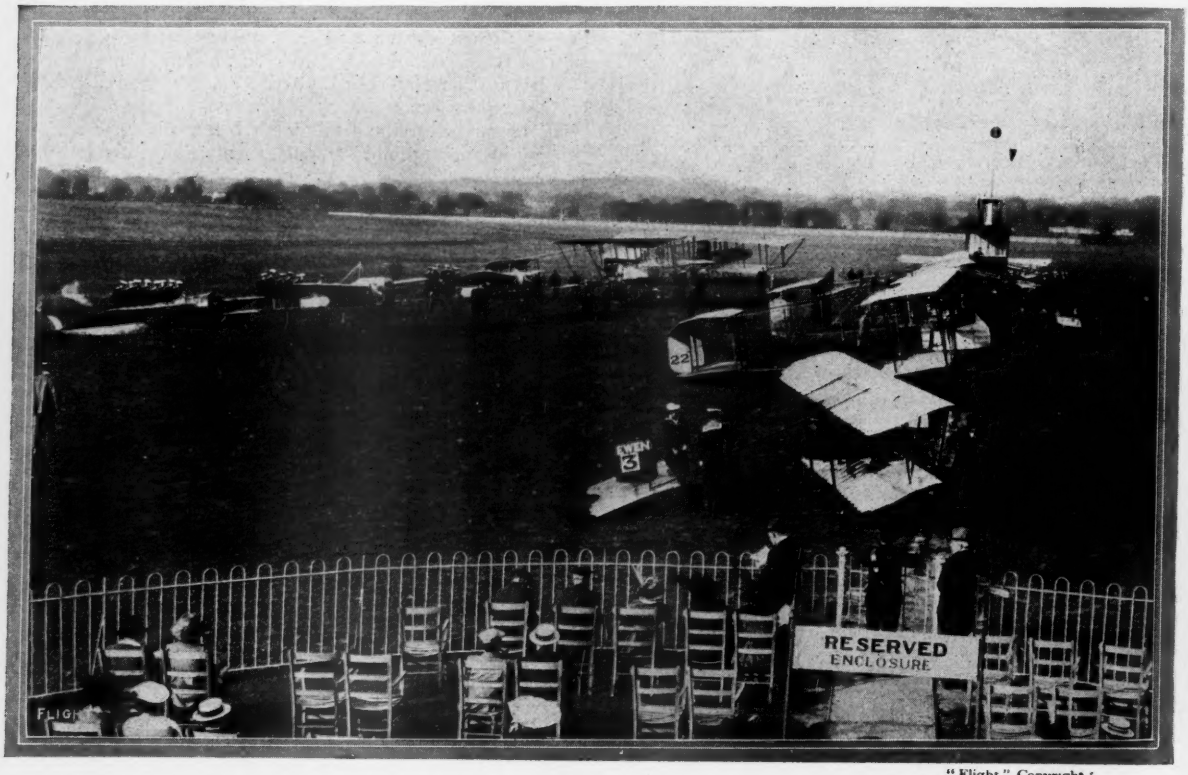
The following appointment was announced by the Admiralty on the 27th ult.:—

Lieut. E. R. C. Nanson, R.N.R., to the "Hermes," additional, for course of instruction at Central Flying School. To date September 25th.



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AT HENDON AERODROME.—Machines about to start for the military cross-country race. On the line are the biplanes and, ranged behind, the monoplanes waiting to take their place on the starting line after the biplanes have got away.

MEN OF MOMENT IN THE WORLD OF FLIGHT.

MONS. E. PÉGOUD and MONS. LOUIS BLÉRIOT.

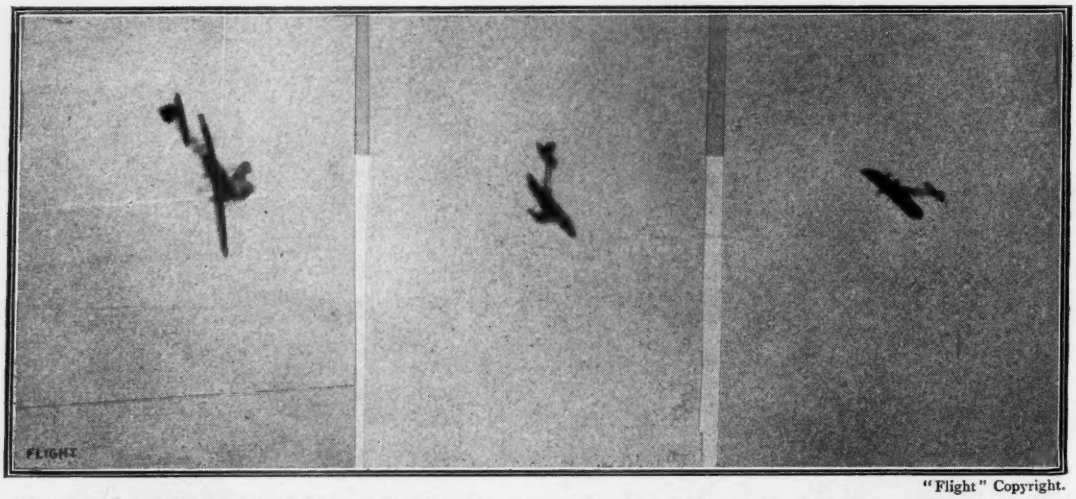
PEGOUD AND HIS FLIGHT.

IN no country of the world could Pegoud have been certain of three such gloriously fine days as Thursday, Friday and Saturday of last week. Everyone who went to Brooklands to see his marvellous flights had ideal conditions, and if they failed to deem the occasion worthy of inscription as a red-letter day for all time to come, then certainly they will never experience one in all their lives.

Pegoud's flying is simple phenomenal. Seen in the proper spirit, it is one of the most encouraging demonstrations that aviation has yet made. When we first heard of Pegoud and his upside down flights, we not unnaturally regarded it more in the light of a sensational stunt than anything else. Having seen his actual performance, however, we are of the opinion that it is the most scientific flying exhibition that has ever been made.

Eliminating all question of the man himself and his remarkable nerve, his exploits in the air demonstrate on a practical scale the whole of the fundamental theory of aeroplane design. Given a well-designed aeroplane, with a tendency to assume a natural head-first gliding attitude, and it is a safe machine so long as it remains intact, and the pilot remains on board. Even when upside down he still controls it. Even when brought to a standstill in the air, it will still, in due course, recover a controllable position. These qualities appertain to the machine; the wonderful part about the man is that he has the nerve to sit still while they are in process.

To see Pegoud do the tail slide is a sight that no one can possibly forget. He drives his machine up into the air steeper and steeper until it just stands on its tail and stops dead. Then there is that moment of suspense, which is so utterly horrible to those who have witnessed



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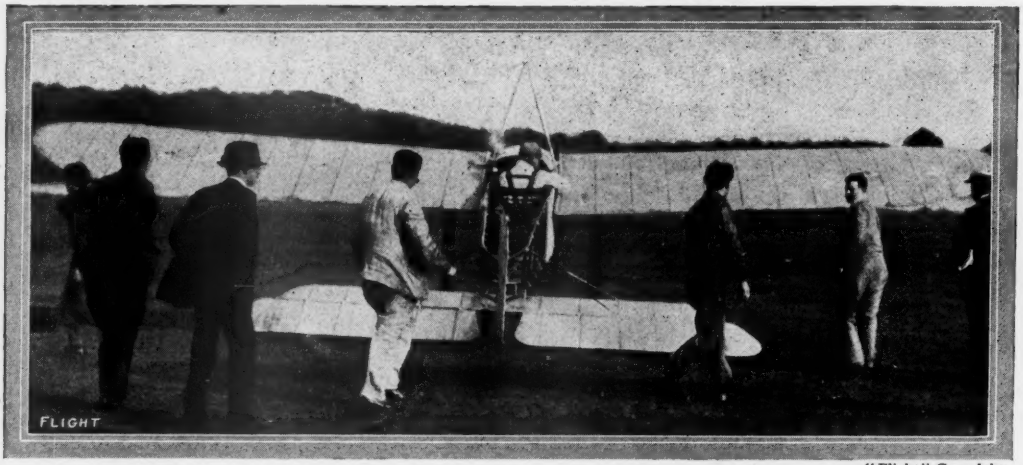
PEGOUL'S EXTRAORDINARY FLIGHTS.—*Three untouched photographs* **of his upside down flying. In the centre: diving for the turn. On the left: turning over. On the right: upside down.**



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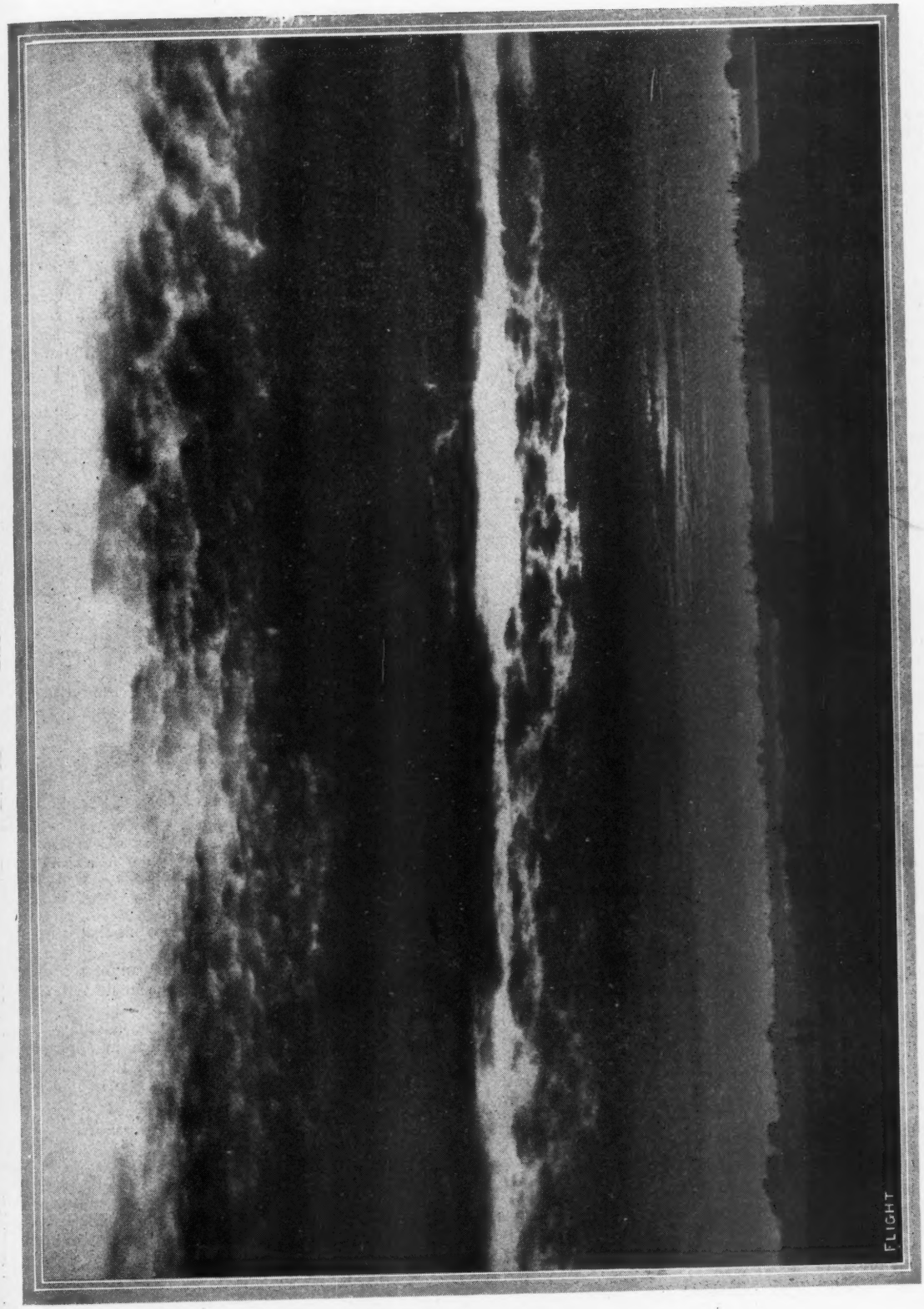
A back view of Pegoud in his Blériot just at the moment of starting at Brooklands for one of his flights showing him strapped in to his seat, and also the tail as fitted to his Blériot.



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A LOVELY SUNSET AT BROOKLANDS.—In the air, M. Pegoud returning from one of his remarkable flights.

an impromptu performance of this character by a beginner. The machine slides down partially backwards and partially sideways. In the ordinary way it is the beginning of the end for the unhappy pilot. To Pegoud it is nothing alarming. He sits calmly in his seat, and he brings the machine round on to a level keel as if nothing has happened.

It is, of course, essential that Pegoud should have sufficient altitude for his operations. He loses an immense height between the start and the finish of all his evolutions; in some of them we estimated that he must have been descending at the rate of about 500 feet a minute, which is far faster than an express lift as operated in America, although it is not so fast as men are sometimes sent down the shaft of a mine.

When we described Pegoud's evolutions last week, we based the descriptions, as we explained, on information given to us by M. Norbert Chereau, M. Blériot's representative in London, but one of the diagrams was incorrect in showing the pilot on the outside of the circle whilst looping the loop. In all the experiments of this kind at Brooklands, Pegoud looped the loop with himself on the inside of the circle. It is not that Pegoud would in the least object to being on the outside of the circle, for so far as he is concerned there is hardly any conceivable position in which he would feel inconvenienced. But, an interesting question arises as to whether it is possible to loop the loop with an aeroplane in which a pilot is on the outside of the circle. The wing surfaces in their inverted position are, of course, far less effective than in their proper position, and although they suffice when thus inverted to sustain flight in the form of a steep glide, which is what Pegoud's upside down flying amounts to, it is questionable whether they could be made to force the machine over the loop.

Pegoud himself has said that he cannot roll his machine upside down from a position in which he is originally right way up, the point being, presumably, that the direction of the acting force is governed by the camber of the wing, and is always in such a direction as to prevent a complete rolling over. He can roll over into what is practically a vertical bank, from which position he can slide into a vertical dive, and when thus vertical he can turn over on to his back as he does in the first experiment.

When on his back he remains there frequently for over a minute at a time, so that everyone has an excellent opportunity of thoroughly appreciating the fact that he is really upside down. There is absolutely no doubt about the position. We watched one such flight lying prone on the grass, and looking at the machine through field glasses. The aeroplane was directly overhead, and the pilot's cap became the focus in the line of sight. He was absolutely vertically upside down, and flying fast, in what in that position seemed to be a horizontal path, but which in reality must have been a steep glide.

Pegoud practises two modes of recovery from such a position. Either he uses his elevator so as to make another vertical dive, from which he flattens out in the ordinary way, or else he rolls over by the aid of the warp. This latter manœuvre is the most extraordinary of all. It is also quite the most difficult to follow, for unless one watches it very closely indeed it is difficult to realise that he has actually changed his position into one that is right way up.

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PEGOUD'S REMARKABLE FLIGHTS AT BROOKLANDS—On the left a view of the upward watchers following his evolutions, and on the right Pegoud being taken round the enclosure after his flights by Major Lindsay Lloyd to enable him to receive a few personal congratulations upon his work.

It will be observed that although he cannot roll over from right way up to upside down, he can do the other thing, and it is done so amazingly quickly that before most people on the ground have realised that anything has happened, Pegoud is flying towards them in a normal attitude, and for several seconds most of the spectators are under the impression that he must be still in his inverted position. It is, in short, an almost indescribable manœuvre, which needs to be seen in order to be appreciated.

None of the diagrams that we published last week in the least gives any idea of what actually takes place. In a diagram one is limited to a line drawn on the plane of the paper, and with the exception of the simple upside down flight, not one of the manœuvres is thus confined to a single plane of operations.

In looping the loop, which Pegoud did some four times in succession on Saturday, the machine comes almost to a standstill at the top of the circle, or that is how it

appears to be to the spectators. So much confidence does Pegoud inspire, however, that instead of having one's heart in one's mouth at such a critical moment one is perfectly content to know that it will be all the same whether the machine completes the circle or just tumbles down backwards. In short, in the four manœuvres that Pegoud carries out, he covers practically all the possible contingencies in which a pilot might accidently find himself, either through the mismanagement of his machine or excessively severe weather conditions.

So calmly and so perfectly does Pegoud handle his machine, that his amazing flights are almost devoid of sensationalism. Viewed through field glasses, which obscure the general environment, Pegoud's flights look almost commonplace. True, his machine is upside down, but what of that? It goes through the air so easily and so gracefully that it is impossible to get up any excitement over the mere fact of its inverted position. Viewed as a whole by the naked eye, however, the spectacle presented by Pegoud's performances is quite the most wonderful thing that ever has been done in the air, and it is quite capable of impressing one in this sense.

The moral of it all is, firstly, the fundamental importance of flying at a sufficient altitude to be able to recover in safety. Apart from that, there is the fundamental necessity for keeping calm, and for being so secured in the machine as to be capable of retaining control of it in any conceivable position that it may assume. It seemed to us that Pegoud's successful and quick recovery from his terrifying positions depended far more on his nerve in letting the machine take care of itself, than in what he did personally in the way of control.

There is very little doubt that many disasters have taken place through pilots having locked their machine into some awkward position through holding the control in the wrong place. Pegoud never jerked his machine in any of his manœuvres. Every action was dignified, slow and graceful. He never appeared to force the machine to do anything, and even in the tail slide, when the aeroplane had to all intents and purposes been tossed up like a pancake to come down whichever way it might, there still remained about the whole affair that same easy assurance and absence of effort.

And now, if Pegoud wants to do a real service to aviation, he should sit down and try and describe in detail exactly what he does with his control lever, so that pilots may have something definite to work upon.

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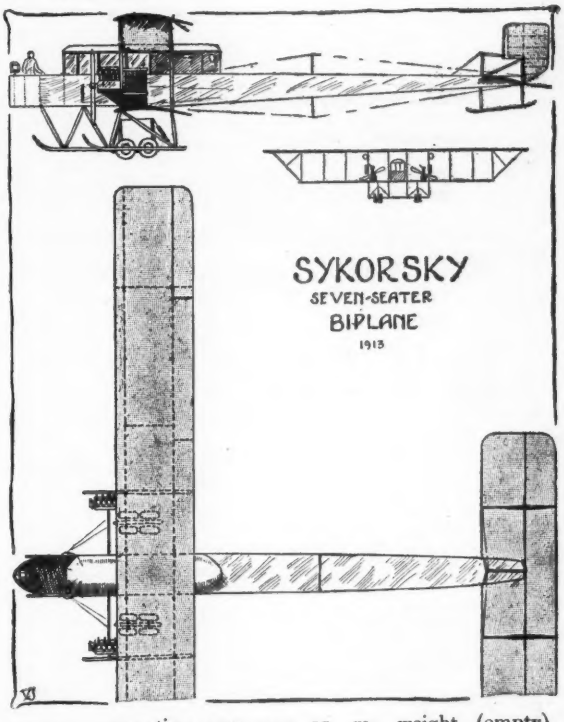
AEROPLANE TYPES.

THE SYKORSKY BIPLANE.

THE Sykorsky "Grand" biplane, the work of a young Russian designer, is exceptionally interesting on account of its enormous size and disposition of power plant. Unfortunately few details are obtainable, but the accompanying sketch plan and elevation, together with the principal dimensions, should give a general idea of this remarkable machine. It certainly constitutes the first successful attempt at a large, multi-passenger machine or aerial 'bus, for it has been flown by its designer for 1 hour 4 mins. with seven passengers, thus demonstrating its practicability. It has a long rectangular-section metal *fuselage* having a large glass-sided cabin forward accommodating the pilot and passengers. The foremost portion of the *fuselage* forms a cockpit in front of the cabin. Various systems of engine mounting have been tried; in its original form, four 100 h.p. Argus motors were mounted on the lower plane, these being arranged tandem fashion on each side of the *fuselage*—two at the leading edge and two immediately behind them at the trailing edge, and each driving independent tractors or propellers. The rear motors were afterwards brought alongside the front ones, so that all four were on the leading edge. Latest particulars to hand show that only the two motors near the *fuselage* are employed. The chassis is extremely strong, and consists of four sets of skids, two long ones supporting the *fuselage* and two shorter ones under the motors. A small skid, carrying two pairs of running wheels, is mounted (by rubber springs) between each of the inner and outer skids. Lateral control is obtained by *ailerons* hinged to the rear spar of the top plane extensions, and longitudinal control is obtained by a rear elevator hinged to a large lifting tail. Dual wheel (*ailerons*) and column (elevator) control is fitted. The principal dimensions are as follows: Span 28 m., length



20 m., supporting area 120 sq. m., weight (empty) 2,700 kilogs., speed 85 k.p.h.

"VEE JAY."

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Thursday Meetings at Hendon.

ARRANGEMENTS have been made by the directors of the London Aerodrome, Hendon, for a series of competitions to be held every Thursday afternoon, in addition to the usual weekly meetings on Saturdays and the exhibition flights on Sundays. For next Thursday a dispatch-carrying relay race is being arranged, while on the following Thursday there will be a handicap race for Morane-Saulnier machines, the winner to receive a silver model of his machine.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A MEETING of the Committee was held on Tuesday, September 30th, 1913, when there were present:—Col. H. C. L. Holden, C.B., F.R.S., in the Chair, Mr. G. B. Cockburn, Mr. F. K. McClean, Mr. Mervyn O'Gorman, Mr. C. F. Pollock, Mr. T. O. M. Sopwith, and the Secretary.

The Late Captain Bertram Dickson.

The Chairman referred to the death of Captain Bertram Dickson, who had been a Member of the Club for many years, and who had also served on the Committee. A resolution of sympathy was unanimously passed and directed to be conveyed to the relatives.

New Member.—The following new Member was elected:—Lieut. Hugh Frederick Treeby.

Aviators' Certificates.—The following Aviators' Certificates were granted:—

627. Lieut. Reginald John Bone, R.N. (E.A.C. Biplane, Eastbourne Aviation Co., Eastbourne). Aug. 16th, 1913.
628. Leonard Rupert Staddon (Carpenter Warrant Officer) (Short Biplane, Naval School, Eastchurch). Sept. 12th, 1913.
629. Frederic George Bevis (E.A.C. Biplane, Eastbourne Aviation Co., Eastbourne). Sept. 13th, 1913.
630. Engineer-Lieut. Gerald West Storey Aldwell, R.N. (Short Biplane, Naval School, Eastchurch). Sept. 15th, 1913.
631. E.R.A. Albert Edward Case (Maurice Farman Biplane, Central Flying School, Upavon). Sept. 17th, 1913.
632. Noel Pemberton Billing (Henry Farman Biplane, Brooklands). Sept. 17th, 1913.
633. Wilfrid Watts (Caudron Biplane, Ewen School, Hendon). Sept. 17th, 1913.
634. Edward John Addis (Vickers Biplane, Vickers School, Brooklands). Sept. 17th, 1913.
635. Capt. Francis A. Ferguson, R.E. (Bristol Biplane, Bristol School, Salisbury Plain). Sept. 22nd, 1913.
636. Petty Officer Frederick James Hooper (Short Biplane, Naval School, Eastchurch). Sept. 22nd, 1913.
637. E.R.A. Vivian Rees (Short Biplane, Naval School, Eastchurch). Sept. 27th, 1913.

The following Certificate taken in America was passed:—

Henry S. Keating.

Aeronaut's Certificate.—The following Aeronaut's Certificate was granted:—

35. Capt. Robert Pigot.

Airship Pilot's Certificate.—The following Airship Pilot's Certificate was granted:—

20. Capt. Robert Pigot.

British Records.

Pilot and Four Passengers.

The report of flight made by Louis Noel, with four passengers, at Hendon, on September 9th, 1913, was considered, and it was decided to accept the flight of 10 mins. 7 secs., as a British duration record for pilot and four passengers. The aircraft used was a Grahame-White Biplane fitted with a 90 h.p. Austrian Daimler.

Pilot and Seven Passengers.

The report of flight made by Louis Noel, with seven passengers, at Hendon, on September 22nd, 1913, was considered, and it was decided to accept the flight of 17 mins. 25⅘ secs., as a British Duration Record for pilot and seven passengers. The aircraft used was a Grahame-White Biplane fitted with a 120 h.p. Austrian Daimler.

It was further decided to submit this flight to the Fédération Aéronautique Internationale for confirmation as a World's Record, the previous best recorded being 6 mins. 49 secs.

London–Paris Race.—The report of the delegates who represented the Club at the Conference at Rheims was received.

(Full particulars appear under these notices.)

Kite and Model Aeroplane Association.—The appointment of the Kite and Model Aeroplane Association as the authority to govern models in this country was renewed for the year 1914. It was also decided to present the Association with a Prize of £5 5*s.* for competition in 1914.

London–Paris Race.

A conference was held during the Rheims Aviation Meeting to deal with the London–Paris Race. The Aero-Club de France was represented by Mr. R. Soreau and Mr. E. Surcouf, and the Royal Aero Club by Mr. Frank K. McClean, Mr. J. H. Ledeboer, and Mr. H. E. Perrin (Secretary). It was decided to hold the Race in the spring of next year, starting from London to Paris and back, and to institute a handicap on a weight-carrying basis. The proposals of the French Club as to the handicap will be considered by the Competitions Committee of the Royal Aero Club.

It was further decided to make it an Annual Race and for the year, 1915, the start and finish will be in Paris. The Prizes for the Race for the first year amount at the present time to nearly £1,500, of which £700 has already been deposited with the Royal Aero Club by the International Correspondence Schools. The balance is being subscribed by the Aero-Club de France.

Presentation to Club Library.

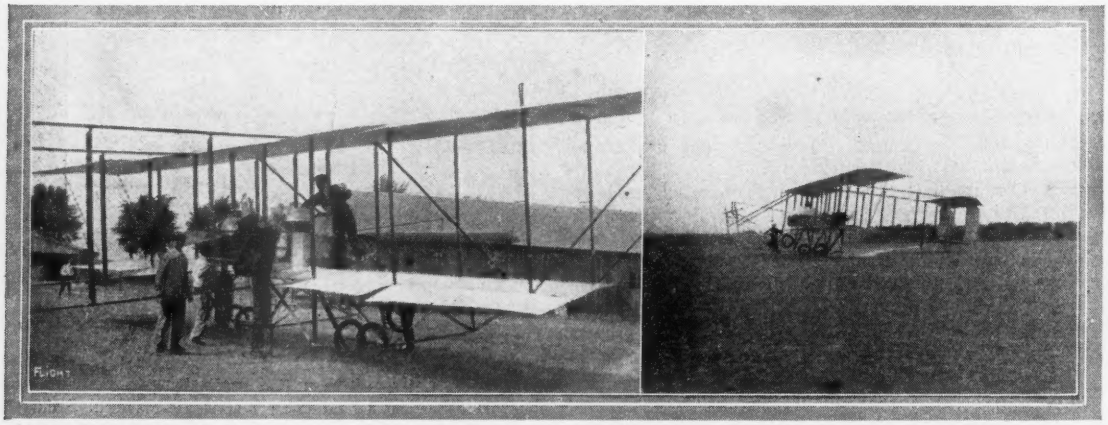
Mr. A. E. Berriman has very kindly presented to the Club Library a copy of his book "Aviation."

British Empire Michelin Competitions £800 and £500.

Intending competitors are reminded that these prizes are now open for competition, and full particulars can be obtained on application to the Club. The closing dates are:—

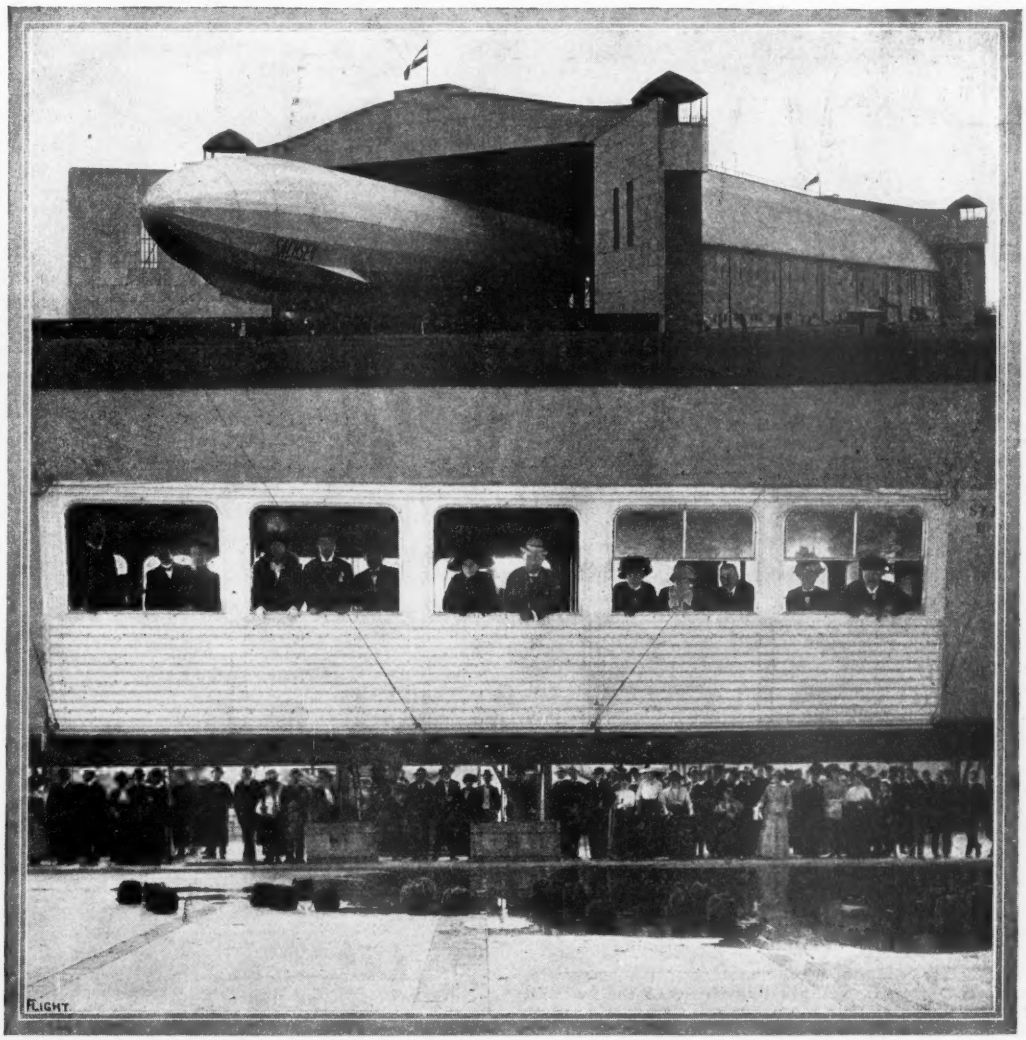
British Empire Michelin No. 1, £500 ... October 31st, 1913.
" " 2, £800 ... October 15th, 1913.

166, Piccadilly, W. HAROLD E. PERRIN, Secretary.



FOURNY'S GREAT FLIGHT OF 15,990 KILOMS.—On the left, fixing up his engine with oil and petrol at the completion of one of the circuits, and on the right, Fourny crossing the finishing line on his Maurice Farman at the end of one of his circuits for the Coupe Michelin.

THE HANSA DIRIGIBLE AIRSHIP AT POTSDAM.—On the left the passenger car, in which are seen, in the second window from the left, Sir John Shelley and Lady Eleanor G. Shelley. On the right are shown the passengers' seating arrangements in the car.



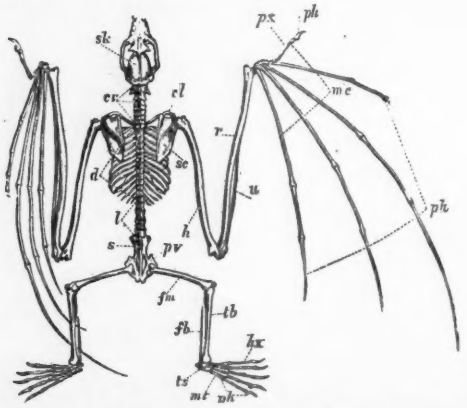
The latest of the passenger-carrying Zeppelins—the "Sachsen"—which attains a speed of 50 m.p.h. Above is seen the airship emerging from its shed at Leipzig, and below is seen an enlargement of the car just before starting in the second window from the left being Sir John and Lady Eleanor G. Shelley, who also made trips in this airship. The photographs have been kindly sent us by Lady Shelley.

NATURAL FLIGHT.

AN EXHIBITION OF UNIQUE INTEREST TO AVIATORS.

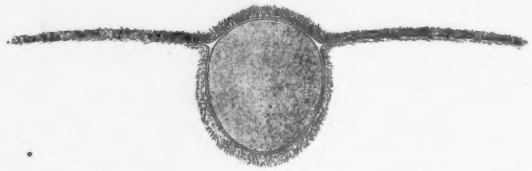
WITHOUT doubt, the authorities of the Natural History Museum deserve well of the aeronautical world for the pains they have taken to prepare an exhibition of specimens illustrative of the modification of the structure of animals in relation to flight. It is to Dr. W. G. Ridewood that credit for this work, which has occupied on and off two or three years, is due, and from the standpoint of aviation we venture to say that there is no more interesting exhibition in the world.

Apart altogether from the question as to whether aeroplanes should be made more birdlike, the fact remains that everyone who is directly associated with the development of artificial flight ought essentially to make an effort to understand and appreciate the methods by which Nature so effectually accomplishes her purpose in birds and insects.



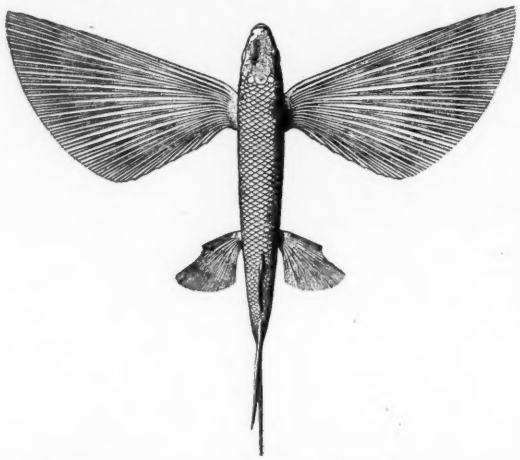
Skeleton of a bat (fox bat or flying fox, *pteropus gigantæus*), showing the elongation of the bones of the arm and hand for the support of the large wing membrane. *cl*, clavicle; *cv*, cervical vertebræ; *d*, dorsal vertebræ; *fb*, fibula; *fm*, femur; *h*, humerus; *hx*, great toe or hallux; *l*, lumbar vertebræ; *mc*, metacarpals; *mt*, metatarsals; *ph*, phalanges; *pv*, pelvis; *px*, thumb or pollex; *r*, radius; *s*, sacral vertebræ; *sc*, scapula; *sk*, skull; *tb*, tibia; *ts*, tarsus; *u*, ulna.

Anyone who goes to the Natural History Museum in Cromwell Road, must be prepared to take pains to understand the labels on the specimens. It is essentially not an exhibit of the sensational order, like the giant octopus or the hideous squid. On the contrary, in order to come under its fascination, one must spend some little time in trying to appreciate the real features of interest that, although not self-evident at a glance, are in reality illustrated with marvellous lucidity if the student will only take the trouble to pay attention to detail.



Section across the body of an African flying squirrel (*anomalurus beecrofti*), about midway between the fore and hind limbs, showing that the patagial membrane consists of skin only—two layers of skin, with thick fur above and scanty hairs below. The drawing is about two-thirds of the natural size.

The entire exhibition occupies only a small recess, but the three or four cases in which the specimens are displayed can easily engage the attention of the visitor for an hour or more even on a first visit, so great is the thought that has been put into the preparation of the various small models.



A flying fish (*exocœtus spilopterus*) seen from above.

In the first case is a collection of mammals, reptiles, amphibions and fishes. Among them, the only certain flying creature is the bat. Some doubt exists as to whether fishes have any power of flight, although responsible observers have placed it on record that the fins do indeed flap during the prolonged leaping glide that these creatures perform. It is quite certain, of course, that the so-called flying squirrels, lemurs, and phalangers are merely equipped with a primitive gliding apparatus, the skin being extended from the back to the feet, so that when the legs are spread outwards a kind of aeroplane surface is formed. The body lies entirely beneath this surface, which however, being end-on, is in quite the wrong attitude to give the best effect.

There is an example in the case of what is known as a flying snake, a very curious object resembling a thin walking-stick more than anything else. These snakes project themselves from rocks on which they have climbed, and in their leaping journey through the air they stiffen their bodies into a straight line. In doing this they also cause the under part of the body to become concave, so that were the snake travelling sideways instead of head first it might be regarded as a cambered surface with an immense aspect ratio.

Flying frog (*rhacophorus nigropalmatus*), with the toes spread to show the membrane, or web, which is present in both fore and hind feet.

It is presumed that the pterodactyles of ancient times were flying creatures, but the evidence is not conclusive. Models in the case enable the visitor to

compare what is known of these animals with the various species that exist to-day.

The bat is, of course, a wonder in flight. For complexity, its evolutions in the air altogether put the average flight of a bird in the shade. A common bat, accidentally caged in a room, will fly under the table, round the legs of the chairs, skim under the ceiling, and dart diagonally down the walls, like a flash of lightning, and without ever touching a thing.

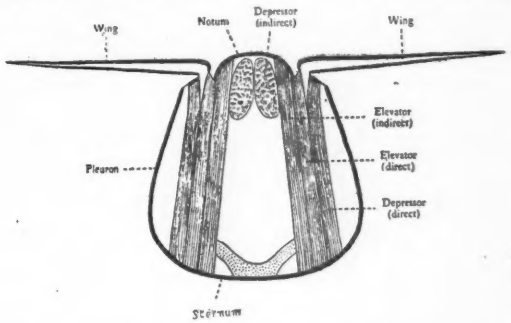
Apart from its wings being membraneous, the bat differs from a bird in the arrangement of the muscles for operating them. The bat has muscles attached to its back, by means of which it lifts its wings. In the bird, the muscles for lifting the wings, as well as those for beating them downwards, are anchored to the keel of the breast-bone.

There is an exceedingly interesting collection of breast-bones of various birds, and one can see at a glance, by the depth of the keel, which belonged to birds that were strong flyers. The depth of keel is notably great in the case of game birds, adjutant birds, and the common pigeon. In the emu and other flightless birds, there is no keel plate at all. The albatross has a wonderfully developed breast of great width, but the keel is not especially deep, which is interesting because, although this bird is a great flyer, it does most of its soaring at the expense of the energy in wind.

The system of muscular control in insects differs again from that of birds, although the dragon-fly and similar insects have their primary muscles arranged on the same plan. In the beetle, and insects of that class, the primary muscles are quite otherwise situated, and the wing is not directly operated by them. There is, however, a system of light secondary muscles similarly arranged to those used by the bird. The most extraordinary thing about the muscular arrangement of the beetle is the fact that one of its primary muscles lies lengthways under its back, and when it wants to beat its wings downwards, it arches its back by contracting this muscle, much as a man might double up from a pain in the stomach.

The edge of the back is attached to the shoulder of the wing, which is pivotted to the side of the body a little further along the arm. The raising of the back thus beats the wing downwards. The return or upward stroke of the wing is controlled by a vertical muscle, joining the back to the stomach, and the contraction of this muscle thus flattens the back and lifts the wing. A dissected specimen of an enormous stag beetle enables these muscles to be examined directly on quite a large scale.

(*To be concluded.*)



Diagrammatic sketch of a section across the thorax of a locust, showing the principal muscles concerned in the elevation and depression of the wings.

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Aero and Motor Boat Show Next March.

THE project of having a special motor boat exhibition at the Agricultural Hall not having received sufficient support, the original arrangement of combining this section with the Aero Show, which will be again organised next March, has been reverted to. In addition to the comprehensive array of aircraft both for land and water work, it is anticipated that there will be a good display of hydroplanes and motor boats, while the multifarious uses of the internal combustion engine will be demonstrated.

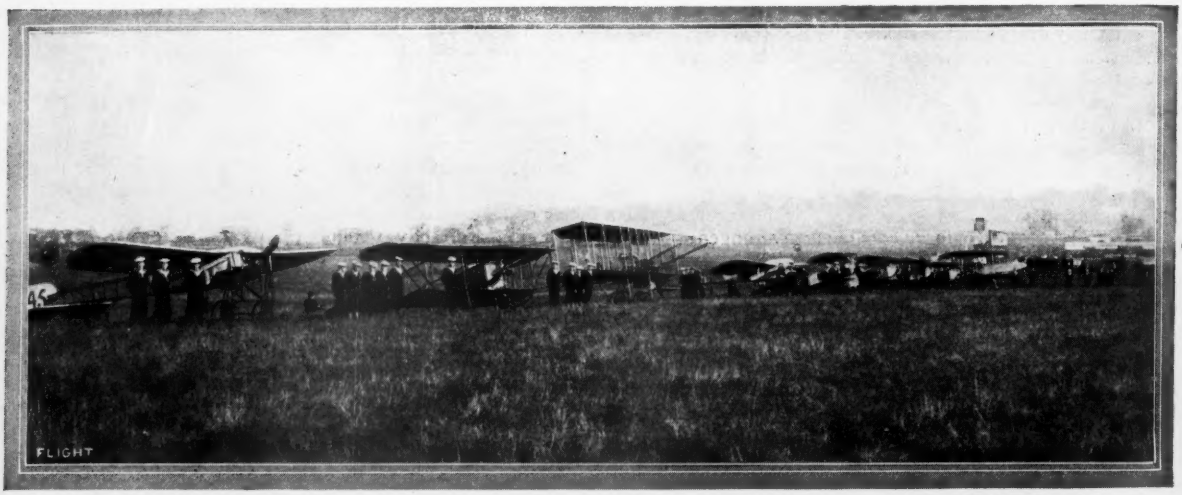
An interesting scene during the German manœuvres—the Kaiser in conversation with Count Zeppelin. On the left Prince Waldemar of Prussia, the Commander of the German Volunteer Automobile Corps.

THE FIRST INTERNATIONAL AIR CONTEST AT HENDON.

SOME interesting contests of an international character took place at the aerodrome on Thursday and Saturday of last week. As a result, no doubt, of the interest caused by the Aerial Derby both days produced a very large gate. The International Air Contest for the Hendon Trophy and £1,000 was secured by Great Britain, represented by Claude Grahame-White and Gustav Hamel, three events out of six being won by the combined efforts of these two pilots. Early on Thursday afternoon B. C. Hucks on his 80 h.p. Blériot the "Tornado" and Lieut. Spencer Grey on a Sopwith tractor left for Brooklands, Marcus D. Manton coming out a little while later on the "G.-W." 'bus and making a high flight. W. L. Brock on the 80-h.p. Blériot, Louis Noel on the "G.-W." Maurice Farman, and P. Marty on the 50 h.p. Morane-Saulnier followed immediately afterwards. Brock ascended again a little later, followed by G. Lee Temple on his Blériot, after which Claude Grahame-White made a test flight on his Maurice Farman. Just before 4 o'clock a start was made for the 12 miles speed contest. In this event there was no handicapping, 3 biplanes—the Maurice Farman with Grahame-White up (Great Britain), a "G.-W." biplane with Louis Noel (France), and the 50 h.p. Gyro Wright with G. W. Beattie in the pilot's seat (U.S.A.)—started simultaneously on the falling of the flag and flew four laps of the aerodrome. As each biplane crossed the line a team-mate piloting a monoplane started off for another four laps, the first home being the winner. Such an imposing "get-off" as this event provided had not been witnessed at Hendon for many a long day. All three biplanes rose into the air like a trio of birds, and made for No. 1 pylon, the first to get round this being Beattie, Noel and Grahame-White, almost abreast, coming next. Grahame-White soon drew up alongside and just ahead of Beattie and continued thus for the first two laps. For the last two laps, Grahame-White got several lengths ahead and Noel got in front of Beattie. The first monoplane to start, therefore, was Hamel's wing-clipped Morane-Saulnier, which had no sooner got off than Noel crossed the line thereby releasing his team-mate Marty on the 50 h.p. Morane-Saulnier. Beattie was not far behind Noel, so Brock on the 50 h.p. Blériot soon followed the first two monoplanes. Hamel's speed round the course was astounding to behold, the other two hardly having a "look in." In fact, by the time Hamel crossed the line after completing four laps, Brock, the last man, had only completed his third lap some twenty seconds before. The first event, therefore, went to Great Britain. Shortly after this event Hamel left for Brooklands to see Pegoud. There being a rather heavy mist hanging low down, it was decided to postpone the cross-country team race and the altitude contest till Saturday, and have instead the quick starting and alighting competitions. The former was held first, opposite the sixpenny enclosure—an excellent idea, for the visitors down this end of the aerodrome do not see very much of the machines at close quarters. This event was for biplanes only, and each competitor had three attempts. France, represented by Louis Noel, got off in the shortest distance and time, his aggregate distance being 239 ft. 6 ins. Brock, on behalf of the U.S.A., was second with an aggregate of 297 ft. 6 ins., whilst Grahame-White, for Great Britain, was third with 566 ft. 5 ins. The next event was the Alighting Contest, each competitor having to land on an "island"—or as near to it as possible—of about 50 ft. diameter. Quite the best attempt was made by Beattie who skimmed along the surface of the "water" and landed just ahead of the breakers, coming to rest almost on the opposite edge. The next best attempt was Noel, who, however, landed in the water some distance from the shore and came to rest in the centre of the "island." Grahame-White also came down in the water. So America won this event with a distance of 48 ft. 6 ins., France being second with 140 ft. and Great Britain third with 202 ft. In addition to these contests, numerous exhibition and passenger flights were put up by Beattie on his Wright, Manton on the "G.-W." 'bus, Noel on the Maurice Farman, Marty on the Morane-Saulnier, Baumann on the Caudron and Brock and Temple on their Blériots. Just before 6 o'clock, N. Spratt, late of the Deperdussin School, made a very nice flight in a Breguet biplane, and while he was up Pierre Verrier returned from Brooklands on the Henry Farman biplane accompanied by a passenger.

Saturday.

Saturday's meeting was an unqualified success, the weather was fine, the flying and races were good, and there was a large attendance, whilst an imposing aspect was given to the surroundings by the presence of 2,000 members of the Royal Naval Volunteers and the Legion of Frontiersmen, who took charge of the various aero-

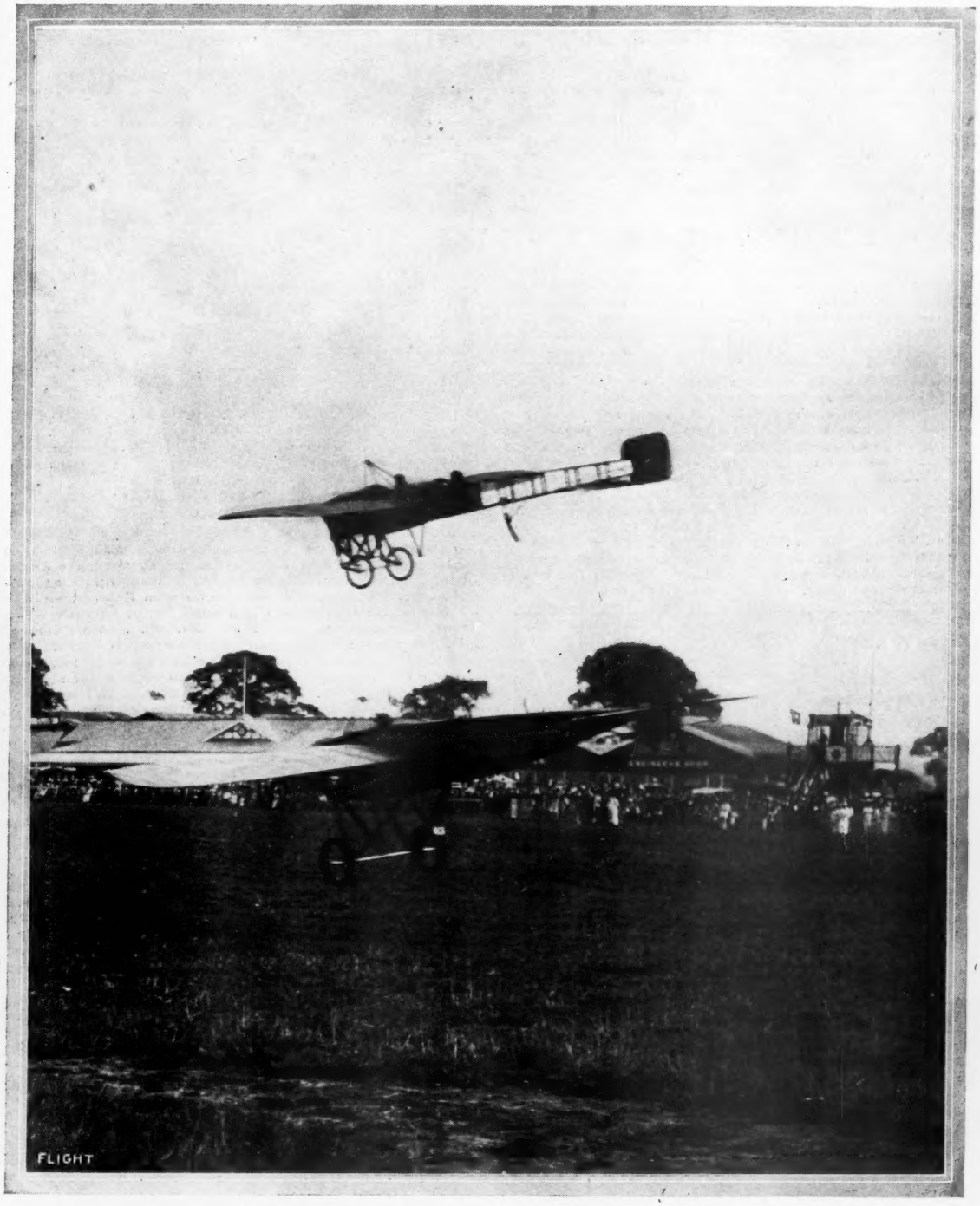


"Flight" Copyright.

NAVAL AND MILITARY DAY AT HENDON.—The machines in line ready for inspection.

planes assembled round No. 1 pylon. Capt. E. L. Ellington, representing the Secretary of State for War, inspected the aeroplanes before they started their duties of the afternoon. Not the least important item on the programme was the presentation of the prizes in connection with the Aerial Derby by Sir Thomas Lipton, who together with Sir William Bull, M.P., was an interested spectator of the afternoon's proceedings. The first event to be held was a 12-mile International Speed Contest, similar to that flown on the Thursday. In this event Beattie banked round the pylons in fine style, and only just managed to get in first with Grahame-White almost alongside. Brock's Blériot, therefore, was the first monoplane to get away, but Hamel, starting immediately after, soon got well ahead, and again won this event for Great Britain, Brock (U.S.A.) being second, and Marty (France) third. The next International event was an 8-mile Cross-Country Contest, the biplanes and monoplanes each completing a lap of the Bittersea Hill course. In this event also, Beattie was the first to release his team-mate, Grahame-White being the next. Hamel's superior speed, however, soon enabled him to obtain a good lead and win yet another event for Great Britain. U.S.A. was again second and France third. The remaining International event was an altitude contest, each competitor being allowed 15 minutes in the air. Only Brock (U.S.A.) and Marty (France) took part in this event, Hamel having gone to Brooklands, accompanied by Miss Trehawke Davies, on a Blériot. Brock won this event for America with a height of 2,700 ft. in 13 mins. 10 secs., France being second with a height of 2,200 ft. in 14 mins. An additional event, a 16-mile

"Military" cross-country handicap, provided a very fine race, there being 10 competitors. The course was the usual four laps to Bittacy Hill, and the competitors started in the following order:—W. Birchenough on the 50 h.p. Grahame-White 'bus (12 mins. 28 secs.); R. H. Carr on a similar machine (10 mins. 30 secs.); Marcus D. Manton on the 50 h.p. Grahame-White biplane (8 mins. 30 secs.); Louis Noel on the Maurice Farman (7 mins.); E. Baumann on the 45 h.p. Caudron (5 mins. 40 secs.); P. Verrier on the Maurice



"Flight" Copyright.

A remarkable photographic record of an incident in the International contest at Hendon on Saturday.—Brock on the Blériot winning by a few feet only from Marty on the Morane-Saulnier, who flew underneath him as they crossed the line.

Farman (3 mins. 22 secs.); G. L. Temple, 50 h.p. Blériot monoplane (3 mins. 10 secs.); W. L. Brock, 80 h.p. Blériot (1 min. 30 secs.); P. Marty, 50 h.p. Morane-Saulnier (38 secs.); and R. Slack with passenger on the 80 h.p. Morane-Saulnier (scratch). With all these machines the air was full of aeroplanes. Three of the competitors, however, Manton, Temple and Birchenough, were unable to complete the course, but the remaining machines came in very close together. The first man in was Louis Noel, followed about a minute after by Brock and Marty. When crossing the line Marty made a strenuous attempt to obtain second place, and darted underneath Brock, who was no higher than No. 1 pylon, in an astonishing manner, only losing second place by two-fifths of a second. Verrier was the next man in, some twenty seconds behind Marty and three seconds ahead of Slack. The last two to arrive home were Baumann and Carr. In addition to the races the usual exhibitions took place, including a demonstration by Grahame-White on the aerial char-à-bancs.

The next day, Sunday, saw an even greater crowd than on the Saturday, and a very large number of flights were made during the afternoon. The most notable feature about these flights was the number of passengers taken up, which was considerably over fifty. There was, in fact, a regular queue of people outside "the office under the Stand." Most of these passengers, too, were ladies, and included Miss Marie Dainton, who was one of a large party from "I Should Worry." The proceedings were opened at 2.30 sharp by Manton, Noel, Carr and Birchenough on the Grahame-White machines, Marty, Brock and Temple following shortly after on the Morane-Saulnier and Blériot monoplanes respectively. Gustav Hamel put up some fine stunt flying on his Derby Morane-Saulnier, and B. C. Hucks also put up some very fine flying on the "Tornado." The little white Caudron was also aloft at several thousand feet piloted by F. Goodden. Late in the evening Claude Grahame-White made a passenger flight in the Maurice Farman, and Temple ascended to 5,000 ft. in his Blériot, descending with a fine *vol plané*.

FROM THE BRITISH FLYING GROUNDS.

Royal Aero Club Eastchurch Flying Grounds.

Lieut. Spenser Grey, R.N., commanding the Calshot Naval Air Base, near Portsmouth, visited the aerodrome on Tuesday, last week, on a Gnome-Sopwith biplane, accompanied by an E.R.A. as mechanic. He arrived about 12 a.m. *via* Dover, and, after a leak in the petrol tank had been put right, and oil and petrol replenished, he left again at 3 p.m. in rather gusty weather, his intention being to return home *via* London.

Commander Samson has been very busily engaged in instructional work on Short No. 2, several E.R.A.'s being under tuition for their *brevets*. Leading-Seaman Bateman, who has made several flights during the past week on the reconstructed Maurice Farman, flies with excellent judgment and landings.

Com. Samson, Lieuts. Osmond, Finch Noyes, Miley, Rainey, &c., Sub-Lieuts. Pierce, Young, Littleton and Capt. Barnby have been putting in plenty of practice this week on Shorts, Deperdussins, Avro, &c.

Mr. Gordon Bell is at Eastchurch again, and on Wednesday successfully put a new Short biplane through the Admiralty acceptance tests in very fine style, Lieut. Clarke Hall being the observer during the test.

Mr. W. H. S. Garnett, who has just successfully taken his ticket on a 50 h.p. tandem Bristol monoplane at Salisbury Plain.

Both Mr. McClean and Prof. Huntingdon had their respective machines out on Sunday last, McClean flying well at a good height, while Prof. Huntingdon completed several circuits, but at no great distance from the ground.

Mr. Maurice Wright has had his glider out a number of times during the week, and together with Mr. Nichol and Mr. Wanklyn several quite good glides from the hill have been made. Wheels have been fitted to the skids. The glider behaves splendidly, and up to the present there have been no serious smashes.

Eng.-Lieut. Briggs on a Gnome-Blériot and Lieut. Davis on the Sopwith arrived from the Army Manœuvres on Friday night. The weather conditions during the past week for the most part being very favourable for flying, due advantage has been taken of it, starting at 6 a.m.

Brooklands Aerodrome.

On Thursday, Friday and Saturday thousands of people flocked to Brooklands to witness the upside down flying demonstrations on the Blériot by Monsieur Pegoud. On the Thursday, Mr. Hamel (on his racing Morane-Saulnier monoplane) and Mr. Hucks (on his two-seater Blériot monoplane) flew over from Hendon; whilst on Friday (on the Hendon aero 'bus) came Messrs. Grahame-White, Carr, Chapman and Lorthy, and Mr. and Mrs. Gates; and M. Marty on the Maurice Farman biplane; Louis Noel (carrying Marcel Desoutter as a passenger); Brock on his Blériot; Baumann on the Caudron—all of whom returned to Hendon the same day accompanied by Mr. Hamel. On Saturday, Mr. Hamel came over with Miss Trehawke Davies in that lady's two-seater Blériot. Every airman of note was present on either or all of the three days.

At intervals on the Thursday, Friday and Saturday, exhibition flights were given by Messrs. Hamel, Raynham, Hawker, Merriam, Verrier and Hucks. A large number of passengers booked flights with the various pilots each day until dusk.

On Sunday there was again a good attendance, the ballot for the free passenger flight being won by Mr. W. Horsey, of the Post Office, New Hall, Addlestone, who was taken up by Mr. Merriam on the Bristol biplane, Mr. Raynham was the first out on his new Avro tractor biplane, and gave a very fine exhibition flight, his machine climbing easily to an altitude of 9,900 ft. in 30 mins., the descent with engine shut off being made in 10 mins. Only the extreme cold prevented Mr. Raynham going higher. Fine exhibition flights were also given by Mr. Hawker on the Sopwith biplane, and by Mr. Merriam on the Bristol biplane, both of them carrying a number of passengers at different times. Mr. Orr Paterson was out on both the No. 5 Vickers and the Blériot monoplane, which he flew extremely well. A number of Vickers pupils were also flying the No. 5 machine. The Vickers cross-country aeroplane handicap was postponed until next Sunday owing to the absence of Mr. Barnwell, and the illness of one of the other pilots, but an interesting alighting competition was held in which the competitors had to climb to 1,000 ft., shut off their engine, and land on a given mark. This was won by Mr. Raynham on the Avro biplane, who reached 1,500 ft., Mr. Merriam being second on the Bristol biplane.

A record entry has been received for the Aeroplane Handicap on October 4th, amongst the machines entered being 2 Sopwith tractor biplanes, 2 Avro biplanes, 6 Vickers machines (3 monoplanes and 3 biplanes), 2 Bristol biplanes, and the Parsons biplane.

Mr. Pemberton Billing has added to his aerial stud by the purchase of the 70-h.p. Gnome Parsons biplane.

Mr. Jack Alcock has been engaged by Mr. Coatalen to test the 150-h.p. Sunbeam engine on the Maurice Farman biplane recently delivered at Brooklands, and this machine is expected out about the middle of next week.

Lieut. R. M. B. Bateman, R.F.A., who has passed for his *brevet* at Larkhill, Salisbury Plain, on a Bristol biplane.

Bristol School.—Very foggy first thing on Monday last week. Alford testing conditions. Merriam afterwards up behind Capt. Henderson, and Mr. Boger (twice). Lieut. Warren alone doing figures of eight, making good landings, afterwards too bumpy for further work. Too windy in the evening for flying. On Tuesday, raining all the morning, and flying impossible. Too windy rest of day.

Merriam testing on Wednesday, doing three circuits, and found it too bad for pupils. In the evening Merriam tested taking Lieut. Spencer as passenger, but still too bad.

Merriam testing on Thursday, Lieut. Warren being passenger, but found very bumpy and gusty. In the evening Merriam out for a solo, but found still bumpy. Later tried again, then up behind Capt. Henderson and Mr. Boger. Lieut. Warren two straights alone. Merriam with Capt. Wallace (new pupil).

Merriam test on Friday, then with Capt. Henderson on straights, this pupil then alone for first time doing some very good straights. Lieut. Warren a solo alone in fine style. Merriam with Capt. Wallace. After breakfast Merriam a test, then Lieut. Warren for a solo, practising landing near a mark. Capt. Henderson doing straights very well. Merriam up with Mr. Boger showing him figures of eight and landings. Too bumpy afterwards. In the evening Merriam testing and found very bumpy, later tried again taking Lieut. Robertson as passenger, found much better, then with Lieut. Warren and Capt. Wallace. Too gusty afterwards for pupils to go alone.

On Saturday, Merriam testing, taking Mr. Alford as passenger but found very bumpy. Merriam testing in the evening, later with Capt. Wallace, Lieut. Robertson and a passenger. Mr. Alford a solo. Darkness stopped further work.

Vickers School.—Monday, last week Barnwell testing new biplane No. 26. Tuesday, in evening Barnwell testing biplane 26, then with passenger on biplane 21.

Paterson Friday morning testing No. 5 mono., then Mr. Elsdon and Mr. Newton-Clare solos. In evening, Paterson on biplane 21 with passengers.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Monday last week Mr. W. Strange circuits under supervision of Mr. Manton. Messrs. L. C. Kidd, J. M. R. Cripps, Carpenter, J. P. Clark, and J. P. Francis straights with and under supervision of Instr. Manton, Mr. W. Strange afterwards making figures of 8.

Mr. J. M. R. Cripps, Mr. Hart Davies straights with Mr. Manton in passenger seat. Tuesday Mr. W. Strange circuits. Mr. L. C. Kidd and Mr. Clark straights with Instr. Manton behind.

Mr. W. Strange solo circuits, Wednesday, Mr. J. M. R. Cripps circuits with instructor behind. Mr. W. Von Segebaden (new pupil) rolling with instructor and afterwards alone. Mr. R. J. Lillywhite straights. Mr. W. Strange circuits. Mr. H. H. Edridge Green (new pupil) rolling.

Thursday Mr. Strange circuits. Mr. F. Hart Davies and Mr. L. C. Kidd straights with instructor. Mr. W. Von Segebaden rolling. Mr. Cripps straights with instructor behind in passenger seat.

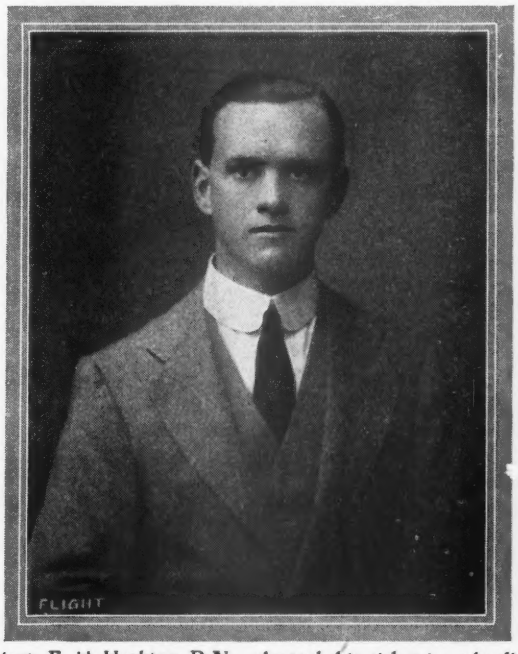
Mr. Carpenter straights Friday with Instr. Manton behind. Mr. R. J. Lillywhite circuits. Messrs. Cripps, Clark, Hart Davis and Kidd circuits with Instr. Manton in passenger seat. Mr. W. Strange solo circuits. Mr. Von Segebaden straights with Mr. Manton. Mr. Edridge Green rolling alone. In the afternoon Mr. Strange, Mr. Hart Davies and Mr. Cripps circuits and straights with Mr. Noel. Mr. Carpenter straights with Mr. Birchenough. Sir Bryan Leighton figures of 8. Mr. Blake solo circuits.

Mr. Strange solo circuits. Saturday Mr. Edridge Green passenger flight with Mr. Birchenough. Mr. Carpenter straights with Mr. Birchenough and afterwards solo straights. Messrs. Clark, L. C. Kidd, Lillywhite, Von Segebaden and Cripps straights under supervision of Mr. Birchenough. Sir Bryan Leighton solo circuits and figures of 8.

W. H. Ewen School.—On Monday, last week, school was out at 6.40 a.m. After a test flight by M. Baumann on *brevet* machine he handed it to Capt. Jenings and Mr. C. George who were doing half-circuits and circuits. Mr. Warren was out on same machine. On 35 h.p. Caudron No. 1, Lieut. Holbrow doing straight flights and small turns and Mr. Scott rolling.

It was too windy on Tuesday for any practice to be done. On Wednesday the pupils were out at 6.30 a.m., when M. Baumann made a test flight on *brevet* machine after which Capt. Jenings and Mr. C. George both made straight flights. On Caudron No. 1, Mr. F. Goodden was instructing Lieut. Holbrow, who was doing short flights and small turns, and Mr. Scott and Lieut. Fraser, who were rolling. The wind was too strong on Thursday for pupils' practice. In the afternoon M. Baumann made a flight on the 60 h.p. Caudron.

School out at 6.30 a.m. on Friday, when M. Baumann, after test flight on *brevet* machine, handed it to Capt. Jenings, Mr. C. George, and Lieut. Holbrow, who were doing straight flights. On Caudron No. 1, Mr. F. Goodden was instructing Lieut. Fraser and Messrs. Scott and Badgery. At 4.30 p.m., Mr. F. Goodden made a test flight on 35 h.p. Caudron No. 3. On No. 2, Mr. F. Goodden instructing Capt. Jenings and Mr. George, who were doing straights. Mr. Warren made a flight on same machine. On No. 1, Lieut. Holbrow and Mr. Scott doing straights, and Mr. Badgery rolling. During the afternoon M. Baumann made a fine flight to Brooklands and back, reaching 4,000 ft. on 60 Caudron.



Lieut. F. H. Haskins, R.N., who took his ticket in splendid style on a Vickers biplane at Brooklands recently.

M. Baumann was out at 6.30 a.m. on Saturday making a test flight on Caudron No. 2, after which he handed the machine to Capt. Jenings and Mr. George who were doing circuits, while Lieut. Holbrow was doing half-circuits and circuits. On No. 1 Mr. F. Goodden was instructing Messrs. Scott and Badgery who were rolling and Lieut. Fraser who was doing straights.

Hall School.—Owing to a *mauvais atterissage* on the part of one of the pupils, there was no practice the early part of last week, whilst the velocity of the wind prevented testing the repaired machine the latter part of the week. The week previous, however, there was quite a lot of flying, W. H. Scotland doing a great many left-hand turns, and landing very well indeed. Lieut. Gran executed some good straights, but found difficulty in landing on an even keel.

Salisbury Plain.

Bristol School.—Foggy first thing, on Monday last week. After it had cleared Jullerot made a trial of 15 minutes, but found too bumpy for school work. Jullerot out again at 12 o'clock, but no improvement in weather. It commenced to rain and continued through the evening. However, Capt. Ferguson and Lieut. Bromet particularly required to take their *brevets* that evening, and accomplished the tests very successfully.

On Tuesday, weather too bad for tuition in the morning. Sippe a short flight in the evening on a tractor biplane with Mr. Voigt as passenger, but found too rough for tuition.

Weather too bad for tuition on Wednesday morning. In the evening Sippe on a tractor biplane with a passenger, and Jullerot on a biplane, both reported too bad for tuition. Later Jullerot, with Lieut. Gallaher, on a biplane for tuition. Lieut. Buckland also went for tuition with Jullerot.

Too rough first thing for tuition on Thursday. Later on Sippe made a trial on a tractor biplane, but found it too bumpy for flying. In the evening Sippe for trial, but still rather bumpy. Jullerot made two trials on biplane. Sippe with Mr. Voigt, and Jullerot a passenger for a flight.

On Friday Jullerot made two trials on the biplane, but conditions were unfavourable for tuition. Jullerot a trial on Saturday on two of the biplanes, then excellent solos by Asst.-Paymaster Coles (four), Capt. Buckland (three), and Mr. Voigt (three).

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THE WIGHT SEAPLANE.

SOME further particulars are now to hand regarding the tests of the Wight seaplane built by Messrs. J. Samuel White and Co., Ltd., of East Cowes, I.W., to designs by Mr. Howard T. Wright. Including these last tests, the machine has been very thoroughly tried by Mr. Gordon England, the aggregate time in the air totalling to 20 hours. During these tests, which were made with full load, we understand that no mechanical weaknesses developed. The speed was 63 m.p.h. with the propeller turning at 1,120 r.p.m. and 31 m.p.h. with 900 r.p.m.

The machine, which is fitted with a 160 h.p. Gnome loses elevation very slowly when flying with 7 cylinders cut off, and flies well with 3 cylinders missing. The present propeller is too powerful for the motor, so that it cannot turn more than 1,120 in the air, which is equivalent to about 120 h.p.

The machine, leaves the water without apparent effort in under 60 yds., *i.e.*, without the "unstuck" effect found in so many hydro-hydroplanes. With a 15 to 20 mile "following" wind, it left the water in about 150 yds., and gets up at from 35 to 40 miles per hour. No difficulty was found in rising with a second passenger and full load.

Alightings can be made at 27 miles per hour with no perceptible shock to the pilot, the machine coming to rest in twice the length of the floats. With regard to climbing, the first 500 ft. was attained in 1 min., and 3,000 ft. in 10 mins. In descending 1,000 ft. 1 min. 21 secs. were occupied at the speed of 46 miles per hour, the gliding angle being about 1 in 5½.

The fore and aft control is ample under all conditions; the machine can be readily recovered from 35 degrees forward tilt and from almost vertical dive in a very short space of time. This was tested fully loaded with a second passenger and light, there being no load on the control lever when flying with the tail up or down.

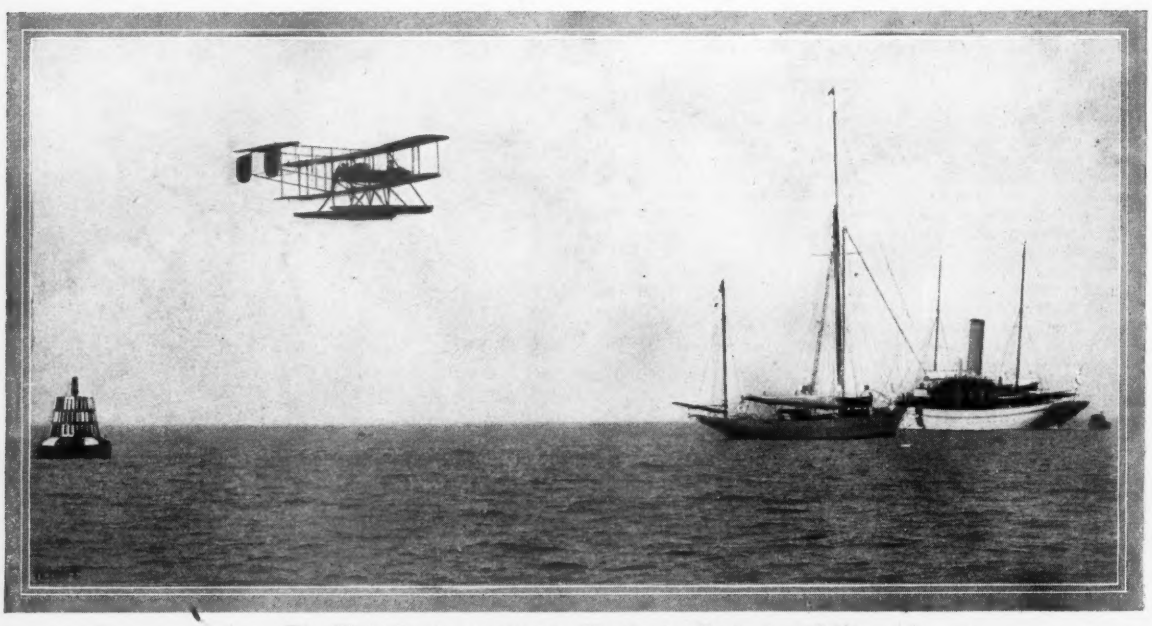
The lateral control is almost automatic. The machine takes its own banking at turns and remains on the bank and leaves it again on the machine being straightened out without the use of the *ailerons*.

With a very gusty wind 17 to 20 miles per hour the machine was very easy to control and no physical strain on the pilot.

With a choppy sea, about 3 ft. high, the floats behaved very well when taxi-ing. The floats do not hit the seas hard, but pass practically through them. The machine can be manœuvred in a strong wind when travelling at a speed of from 25–30 m.p.h.

The machine behaved satisfactorily when towed.

We may repeat that the dimensions of the machine are: Span, 44 ft.; overall length, 30 ft.; height, 11 ft. 6 ins.; weight, empty, 1,700 lbs., loaded 2,400. The floats are Messrs. White's own patents, while the planes have Mr. Howard T. Wright's double camber.



The Wight Seaplane, piloted by Mr. Gordon England, in flight.

ARMCHAIR REFLECTIONS.

By THE DREAMER.

The Topsy-Turvy Epidemic.

If a writer is a genius, and has perfect confidence in himself, or if he is a fool and doesn't know any better, he may look over back numbers. Personally I seldom have the pluck to do so. I know I am not the one, and am afraid I might stand revealed as the other, so a back number is to me—a back number. I have no need to look over what I have written to know if it has passed muster. If I do not get any letters telling me what I am, I know that either it has scraped through or nobody has taken the trouble to read me, and in either case I am satisfied. Unfortunately, however, I have a pretty good memory, and when all the world is willing to forgive me my transgressions, and I feel I am going on my way rejoicing, I find myself in a blind alley with memory bringing me up all standing.

I remember, for instance, that a week or two ago I wrote something about being just and giving the devil his due. I also remember that I have said something about Pegoud's flying, and that I labelled it a circus performance, and said it did no good and did not teach us anything. I was wrong: I take this earliest opportunity of admitting it; it teaches us a lot. Amongst other things, it teaches me to hold my tongue—or rather pen, until I know what I am talking about.

I went down to Brooklands on Thursday to see this "acrobat" and be pleased with myself that I condemned it. I was so "annoyed" that I went again on Friday; could I have done so, I should have gone again on Saturday, and, incidentally, I should go every day for a month, were he going to continue.

I went down expecting to see aerial fireworks. I expected to see him rush down from a great height at enormous speed, and then execute a gymnastic performance in the twinkling of an eye, and at a speed that none could follow. Instead, I saw him float about quietly in the air, and in a leisurely fashion turn his machine over in all directions like a piece of paper in a gentle breeze.

There is no hurry about it, it is all done by kindness and is so simple, so very simple and easy—to Pegoud, that I fear the result on other pilots, who will no doubt try to do the same thing. Beware! There is more in it than meets the eye. You may buy a Blériot, you may have the *cabane* moved forward, you may have stronger cables fitted, you may have a greater warp, you may have a special rudder and elevator, but there is one thing you cannot buy, and it is the chief thing—the human element. Pegoud is one by himself. What he does is of the greatest scientific value, and of the utmost interest in the art of aerial navigation, but one is quite sufficient to carry on the experiments. As a circus performance it isn't worth a cent. It is all done at a considerable altitude, and it is not very easy to see it at all; only in that we know it is done, genuinely done, lies the interest and the value. I suppose it is rather a delicate question for the Royal Aero Club as to whether they should exercise some discretion in the matter of who should be allowed to try it. Almost one half the pilots I know have told me that they intend to do it. Well, I personally don't think it is necessary, and apart from that, I, with all humility, doubt whether some, at least, know quite so much about the science of aviation as they think. A man may join a school, and in a few hours or a few weeks, as the case may be, learn to fly his machine quite well—in practice. He knows how and when to use the control, and may even put up quite a decent show of exhibition flying, *vol plané*, spiral, and all the rest of it, but the knowledge is purely mechanical in a good many cases.

How many of our younger and latter-day pilots know the "inner reason," if I may put it that way, of what takes place?

Pegoud may, or may not, be skilled in this way; I know very little about him, and so cannot say, but whether he knows or not, he has a man behind him in M. Blériot who does know, and I noticed at Brooklands that he gave his pilot very minute particulars of what he was to do and how to do it, and I have little doubt that Pegoud followed the teachings of his master.

To the onlooker it seems that he just lets his machine do what it likes, and no doubt he does, with a difference. He turns his machine over on its back, and turns it back again with ease and certainty, but I saw enough of it to see that there is one particular moment, when the machine is in such a position as to render this possible, and that the way, one of many, has been decided on some seconds before, and that the machine has been manœuvred into that position delicately but deliberately. Pilots will be well advised to learn, but not to try the upside-down business till it is forced upon them, when, may they live to bless Pegoud and the lessons he has taught.

Church Hill, Hendon.

I call it Church Hill. I don't know whether this is the correct name as given in the local guide; in all probability it is called Greyhound Hill, after the manner of the 'buses. 'Buses have a way of fixing their points of call by the licensed premises on their route, much after the style of Dick Swiveller, but to me it is Church Hill, and I have to walk up it and down it every time I go to the aerodrome, and I have said things about that hill on hot days. There are some scientific chaps in our office, who tell me that the energy expended in getting an object to a given altitude is returned in exactly the same proportion when the object is coming down under the influence of gravity; or something to that effect. I don't know much about it myself, except that the "regulars" at Lyons' are getting a bit sick of our row. Taking it on their own showing, I should be led to suppose that the coming down this hill should help me up again, but it doesn't. Perhaps the line of thrust is too low, or there may be an internal wastage of energy after the manner of an accumulator when left standing; I don't know, but in any case it is much harder to go up than down, and I always want a rest at the top. There is always a whole lot of "won't pays" at the top, and while I rest I am amused at the enormous knowledge they have gained in matters aeronautical from their distant point of vantage.

Fair young thing, who is there for the first time, to youth who knows all about it:

"Oh! look, there's another. That's Hamel, I think."

"Don't be silly, Hamel don't fly a four-wheeler; that's one of them biplanes. Can't you see the four wings? Hamel flies a two-winger."

"What makes it go up, Jack?"

"Why, the engine, of course; didn't yer know that?"

"Well, what makes it come down, then?"

"Why the—well—yer wouldn't expect it to keep

going up, would yer? How's he going to come down again, if he keeps going up? It's the engine."

"But I thought you said it was the engine that made it go up."

"So it is, silly. It makes it go up, and it makes it come down. Can't he make it go the other way round, like a steam-boat engine?"

Stout old party, with ditto wife:

"Well, let them fly as likes. I wouldn't go up in one of them things for nothing."

"They charges two guineas, don't they?"

"Don't try and be funny; you know what I mean. If we had been meant to fly, we should have been born with wings."

"How about railway trains, then? It isn't usual for people to be born with——"

"Shut up and come home, do."

"I'd like to go up."

"Come home."

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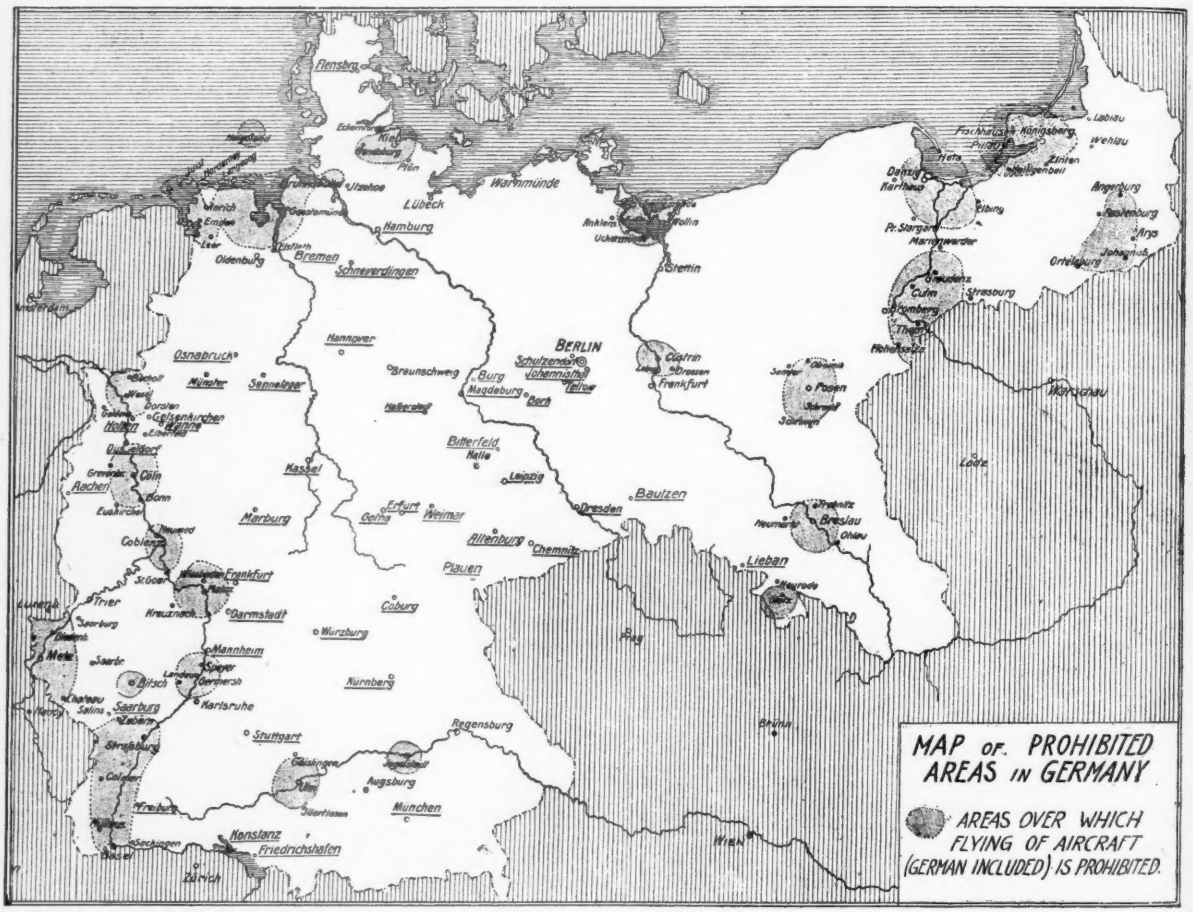
PROHIBITED AREAS IN GERMANY.



WE reproduce herewith a map drawn up by the German Aeronautical Association showing the areas over which flying is prohibited in Germany, foreigners and Germans alike. These areas include 95 kiloms. round Wesel, 30 kiloms. round Cologne, 20 kiloms. round Coblentz, 25 kiloms. round Mayence, 10 kiloms. round Bitsch and 25 kiloms. round Spire and Gemershein. An area about 100 kiloms. long and 50 kiloms. wide round Metz on the French frontier is also scheduled as well as an area about 120 kiloms. long, including Strasburg and Colmar, down to the Swiss border. In Bavaria flying is prohibited over the country round Ulm and Ingolstadt, while in the west the areas are round Custrin, Posen, Breslau and Glatz. In North-Eastern Germany it will be seen that there are large prohibited areas round the Arsenals at Dantzig and Konigsburg, as well as two others on the Russian frontier. On the German coastline flying over the districts round Swinemunde, Kiel and Heligoland is prohibited as it is also over the coastline on the North Sea from Emden to Brunsbutte.

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Brindejonc Still Pommery Cup Leader.

NOT a little excitement was aroused in French aeronautical circles last week by an announcement that as a result of enquiries which had been instituted by Brindejonc des Moulinais, it seemed that a mistake had been made in taking Brackel as the place where Guillaux landed instead of Brockel which is about 40 kilometres nearer Paris.

The error appears to have arisen mainly owing to the bad writing of the German official who made out a report of Guillaux's landing and was not noticed by Guillaux, who was not aware that there were two places with such similar names in the same district. The result is that Brindejonc's flight from Paris to Warsaw, 1,382 kiloms. still leads in the last Pommery Cup competition which ends very shortly now.

FLIGHT

BRITISH NOTES OF THE WEEK.

The London-Paris-London Race.

As the result of a conference between representatives of the Royal Aero Club and the Aero Club of France at Rheims, it has been decided to postpone this event to the spring of next year. The course will be from London to Paris and back and a handicap will be framed on a weight-carrying basis. It was also decided to make it an annual event, and for 1915 the start and finish will be at Paris. For the first year the prizes will amount to about £1,500, of which the International Correspondence Schools' £700 has already been deposited with the Royal Aero Club, while the remainder will be subscribed by the Aero Club of France.

New Passenger Records.

It will be seen from the official notices on page 1090, that the Royal Aero Club has accepted the flight of 10 mins. 7 secs., made by Louis Noel, with four passengers, on the Grahame-White biplane as a British record, as well as the same pilot's flight of 17 mins. 25⅘ secs., with pilot and seven passengers, and the latter has been submitted to the Fédération Aéronautique Internationale as a world's record.

Cross-country with Four Passengers.

Mr. Claude Grahame-White on his "char-à-bancs" on Friday of last week paid a visit to Brooklands, taking over five passengers, including Mr. and Mrs. Gates and Messrs. North, Chapman and Carr. Later, the party, with Mr. Manders replacing Chapman, returned to Hendon, the 19 miles being covered in a quarter of an hour.

Death of Capt. Bertram Dickson.

Within a week of the anniversary of the terrible accident which so tragically cut short his brilliant career as a pilot, Capt. Bertram Dickson, we regret extremely to record, died on Sunday last at Lochrosque Castle, Ross-shire. It will be remembered that at the end of the Milan meeting, at which his flying had drawn forth the congratulations of the King of Italy, Capt. Dickson was rising on his Farman biplane when an Antoinette machine piloted by Thomas crashed down upon it. This occurred on October 2nd, 1910, and Capt. Dickson was so terribly injured that his friends never expected that he would recover. His splendid physique and courage, however, enabled him to literally fight his way back to health again, although he was never able to completely shake off the effects of the injuries he had sustained. He always looked forward to the time when he hoped to be able once more to pilot an aeroplane, but it was not to be. He will, however, be remembered for all time as the first aviator to take part in British Army manœuvres, and for his fine flying at Angers, Tours, Bournemouth, Lanark, Dublin, and many other places.

Col. Seely's Latest Flight.

On Friday of last week Col. Seely, the Secretary for War, made his fifth flight with an aeroplane, going up in one of the Army machines stationed at the temporary aerodrome for the manœuvres at Lilbourne, Northamptonshire. The King and Queen were interested spectators of the flight, and heartily congratulated Col. Seely when he descended. Their Majesties also made an inspection of the various machines which had taken part in the manœuvres.

Progress of Mrs. Stocks and Mr. Sydney Pickles.

At the moment of going to press we learned that Mrs. Stocks was still lying unconscious, but was taking her food well, while Mr. Pickles, although he did not pass such a good night on Wednesday, was going on hopefully.

Robert Loraine to Fly Again.

After a rest of nearly three years Mr. Robert Loraine, the actor-aviator, has decided to take up flying again, and his re-appearance was to have been made at Hendon on a Grahame-White machine on Thursday last.

Mr. Prosser at Cardiff.

Two good flights were made by Mr. Edwin Prosser on his Caudron biplane at Cardiff, on Saturday. Starting from the Ely racecourse he flew over the football ground at Ninian Park and finished his flight by a good spiral *vol plané* at the racecourse. Later in the afternoon he made a trip round the Canton end of the city, his progress being watched by large crowds at every vantage point.

Aerial Experiments at Watford.

Experimental tests are shortly to be conducted at The Lea Graston, near Watford, the residence of Mr. Wallace Spiers, with a waterplane, invented by Mr. William Beedle, inventor of the Beedle Fan and Propeller, who will be remembered by many as the constructor of a dirigible as far back as 1903. The new machine will be known as the Beedle and Wallace Spiers biplane, and among the advantages claimed for it are stability and safety under any weather conditions.

A Change of Name.

We understand that Mr. D. E. Garnett having severed his connection with Messrs. Lang, Garnett and Co., the name of the firm has been changed to the Lang Propeller, Ltd. Communications should in future be so addressed to the Riverside Works, Weybridge, Surrey. The Firm's telephone number is Weybridge 182 and their telegraphic address "Aerosticks" Weybridge.

A TRIBUTE TO THE ROYAL FLYING CORPS.

Hearing that Mr. Holt Thomas, who in the past so repeatedly drew attention to what was going on abroad, had visited the aviation camps at the Manœuvres, we asked his views, and quote his letter to the Editor :—

"I can only say I was astounded. I know the work that has gone on during the last 18 months or so, but I certainly did not expect the result as shown by this year's manœuvres under particularly trying conditions and in very unpleasant country. I refer to the superb skill and excellent organisation of the aerial force, which, though small, now only wants increasing in numbers and in size. I am not ashamed, as perhaps one of the strongest critics of our dilatory methods in the past, to pay a tribute to the (in my opinion) extraordinary results obtained in a very short time.

"To confess oneself astounded may tend to show ignorance of what our naval and military pilots are capable of, and I do not mind confessing to that with the qualifying words 'as a body.' It is common knowledge that we have pilots in both services second to none, but the work done by one and all at the recent manœuvres was the first real evidence of the possession of a 'force.' The wind was exceptional, and it needed no gauge with which to measure it, the pilots themselves providing that by flying machines practically to a standstill. No wind, however, brought them down. At Lilbourne, when I was there, the wind was certainly up to fifty miles an hour and the country very far from ideal for landing, and yet directly a message was received asking for reports in certain districts no hesitation was shown in despatching machines. With a fairly wide experience of what is going on abroad, I think I may safely say we have nothing to fear as to the 'quality' of the British service pilot. He is second to none, and has shown it under more than active-service conditions.

"I remember the manœuvres of 1910, when the late Captain Bertram Dickson was the only pilot. (He met with the accident, which has so lamentably cut off his career, only a few days after.) Three years ago, and yet, fine pilot as he was, the wind, although only a moderate breeze, actually forced him down, and this over Salisbury Plain; and now three years later we find almost identically the same number of machines as employed at this year's French manœuvres flying in wind which reduced the speed of the machines to almost a standstill. It is impossible to give sufficient credit to the Royal Flying Corps and those responsible for it. The 3rd Squadron—moving the whole camp, machines, workshop and men day by day—showed what can be done in the way of transport. When I visited them, in awful weather, fog alone was holding them back, and this, not because they could not fly in it, but because their reports would be useless. All we want is more men of the same type I have seen at this year's manœuvres and more machines, as although we employed almost the same number of machines as France, *they* had only a very small proportion of their available number employed. The progress shown here is enormous, and I have no hesitation in admitting that I *was* astounded.

"In the Irish manœuvres the same good flights were put up, including the crossing of the Irish Channel.

"As far as organisation is concerned, here again, although great difficulties must have been overcome by someone, little was lacking. If we go on as we have begun we need not fear meeting any force superior in skill although we still lack numbers. It is the more creditable to the general system of training and organising our Flying Corps, inasmuch as we know that it has all been arrived at in an almost incredibly short time, I mean, since the time when no Flying Corps existed.

"A word should be said for the dirigibles, which, although sadly lacking in size and number, were on active-service conditions and doing splendid work."

FOREIGN AVIATION NEWS.

A New German Duration Record.

IT is announced from Berlin that, on the 26th ult., Langer beat the German duration record by flying for 9 hrs. 1 min. 57 secs.

Records at the Johannisthal Meeting.

THE flying week at Johannisthal, which opened on Sunday, commenced well. The longest flight, 1 hr. 14 mins., was by Stiploschek and the next best was 58 mins. by Reiterer, who also climbed to the greatest height, 2,900 metres, on his Etrich. In the speed contest Laitsch was first in 10 mins. 25⅘ secs. On Sunday Sablatnig made a new height record for pilot and three passengers by going up to 2,830 metres.

A Dutch Passenger Height Record.

ON the conclusion of his work at the manœuvres, in Holland, Van Steyn on his 80 h.p. Gnome-H. Farman succeeded in taking up a passenger to 2,880 metres during an hour's flight, and thus improved on the Dutch height record for pilot and one passenger.

The Latest Santos-Dumont Machine.

NOT only has M. Santos-Dumont been taking lessons at the Morane school, but he has designed a new machine which has been built in the Morane-Saulnier works. The machine as regards the *fuselage*, etc., is similar to the Morane machines, but the main plane is in one piece, and is fixed about 80 centimetres above the top of the *fuselage*. In its trials at Villacoublay the new Santos-Dumont monoplane has given good results.

A German Military Aviator in France.

CONSIDERABLE excitement was caused at Neufchatel, near Boulogne, on Monday night when a German aviator on an Albatros monoplane landed. He gave his name as Lieut. H. Steffen, and stated that he was endeavouring to make a long-distance record. He had started from Johannisthal with the intention of going to Bale, but, after making a stop at Cologne, he was driven off his course to the northward, and eventually landed at Brussels. From there he arranged to fly across to Dover, but he once more lost his way and landed at Neufchatel to discover his whereabouts. The civil and military authorities, were communicated with, and as the pilot could not produce a permit he had to be detained pending enquiries. Apparently these resulted satisfactorily, as on Wednesday the machine was dismantled and returned to Germany by train.

An interesting photograph of the beach at Deauville taken by Lieut. Seddon, R.N., recently, whilst flying with Mr. Henry Farman on his new hydro-aeroplane, which created such a great interest there recently. It will be noted that the photograph is partly obscured by the pilot's arm.

Touring on a Farman.

ON a H. Farman machine, with 80 h.p. Gnome engine, Sergeant Dambreville, stationed at Verdun, on Saturday arrived at Coucy le Chateau. He had set out from Rheims on the previous Tuesday, and had flown *via* Dijon, Lyon, Poitiers, Berck, Calais and Peronne. Later in the day he completed the tour at Verdun. He was accompanied throughout by a mechanician.

Olieslaegers Flying Again.

LAST Saturday week saw Jan Olieslaegers, who gave up flying about two years ago after making several noteworthy flights, back at the *cloche* of a Blériot machine. He attacked the Dutch height record, and improved it to 2,100 metres, although it was not to stand for long, as Van Steyn improved it still further during the week.

Paris to Mans on a Blériot.

HAVING an engagement to fly at Mans, Montmain on his Blériot flew there from Paris on Tuesday, covering the 200 kiloms. without incident.

A Franco-German Match.

THE German pilot Alfred Friedrich, who recently flew from Berlin to Paris, and London and back, has accepted an invitation to take part in a series of flights with Garros and Audemars at Paris towards the end of this month.

Cross-country with Champel Machine.

PILOTING his large Anzani-engined biplane F. H. Champel, accompanied by his wife and mechanician, on the 25th ult. flew to Juvisy to Mans, the machine being kept at a great altitude all the way.

Villacoublay to Rheims Twice.

ACCOMPANIED by Mme. Bonnier, Marc Bonnier on the 24th ult. left Villacoublay to take a Nieuport to Rheims. He had to land at Fere-en-Tardenois on account of the mist, but in spite of a 15 min. stop his time from Paris to Rheims was only 1 hr. 35 mins. The next day on another Nieuport he again flew from Villacoublay to Rheims, this time having as passengers Mme. Bonnier and a mechanic.

Good Flight by Guillaux.

ON his Clement Bayard monoplane, Guillaux on Saturday last made a fine trip from Issy to Mans, arriving just as it was getting dark, after flying the 200 kiloms. in an hour and a half.

Farman Superior Pilots.

OVER a course of 250 kiloms. from Etampes to Vendome, and Chateaudun and back to Etampes, Jacquemont on Saturday last made one of the qualifying tests for a superior *brevet* in splendid style.

On the 25th ult., Bagnol made one of the triangular flights over the Etampes-Vendome-Chateaudun course. After only a short period of training at the Farman school at Buc, Mallet, a C.N. pupil, on Friday of last week, made the triangular test for a superior *brevet* over the Buc-Chartres-Orleans course on a H. Farman machine. On Saturday he flew the 150 kiloms. to Chalons Camp, and later in the day returned to Buc.

Two Ponnier Superior Pilots.

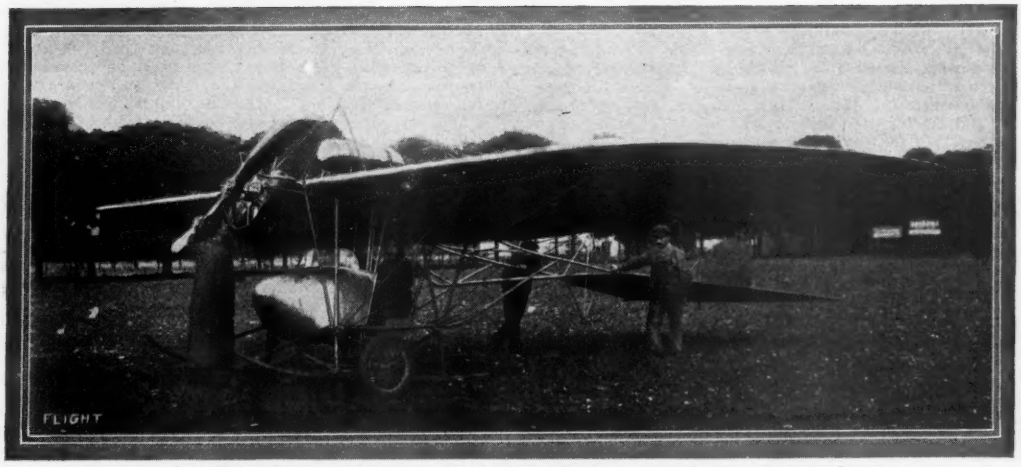
FOLLOWING on the successful conclusion of Emile Vedrines flights for his superior *brevet*, a soldier, Bertin, qualified last week. Like E. Vedrines he used a Ponnier monoplane, and his triangular course was the usual one, Mourmelon-Sissonne-Mailly, while the out and home flight was effected over the course from Mourmelon to Douai and back.

Two Hours' Perilous Voyage.

AFTER a very exciting trip of a couple of hours, during which his little Caudron biplane was tossed about by the wind, Lieut. Coville, accompanied by Sapper Firion, landed at Beauvais camp. He had started from Crotoy.

Serious Mishap to Cavelier.

AFTER a very fine flight from Juvisy to Rheims on his Nieuport monoplane Cavelier was caught in a *remous* and met with disaster. He was flying at a height of 1,200 metres when his machine suddenly turned over and dropped to within 400 metres of the ground. After describing the figure of an S, Cavelier succeeded in righting the machine, but before he could get it fully under control it dropped to the ground from a height of about 20 metres. The unfortunate pilot sustained fractures of his legs and shoulders, and was also seriously injured internally.



M. Moreau's monoplane, on which the stability tests took place last week.

The Bonnet "Stability" Prize Won by Moreau.

ALTHOUGH the winning of the Bonnet prize by M. Moreau, on the 24th ult., at Melun, may be taken as a good example of compliance with the rules governing the contests for such prizes, it is hardly correct to describe the performance as a demonstration of the complete automatic stability of the machine. The conditions called for a flight of 20 kiloms. in a wind blowing 15 m.p.h. without the pilot touching the control lever with his hands. Nothing was stipulated with regard to the use of the rudder and apparently during the above performance the pilot kept his feet very busy on the rudder bar, judging from a signed report furnished by M. Charles Lafon, the official observer. He says:—"*Le pilote vola vingt-cinq minutes les bras croisés. Ah! certes, le problème de la stabilisation automatique n'est pas résolu, car Moreau travailla dur avec ses pieds, non seulement pour faire les virages, mais aussi pour corriger.*"

It would appear to be highly desirable that when the Ligue Nationale Aerienne are again drawing up rules for such prizes as this they should seek a little expert advice. At the same time, we must congratulate M. Moreau on securing the prize although in doing so he appears to have given the observer who had to accompany him a pretty busy time.

Two Attempts for Michelin Cup.

STARTING from Gidy and flying to Lhumery and back, Duval on his Deperdussin on the 23rd ult. commenced an attack on Fourny's record for the International Michelin Cup. He made 6 rounds of this course each day for 3 days, but on the conclusion of the last day's flying he made a bad landing and smashed the chassis of his machine so that he had to give up when his record stood at 1,922·8 kiloms. Fischer with his H. Farman machine made another start on the 24th ult., but at the end of two days he had to give up again after completing 1,113·2 kiloms.

Chevillard in Sweden.

CONTINUING his tour of Sweden, Chevillard on his 80 h.p. H. Farman, with Capt. Sunstedl as passenger, on the 24th ult. flew the 180 kiloms. from Stockholm to Gefle in 1 hr. 35 mins. The following day he went on to Falon and traversed the 95 kiloms. between the two towns in 50 mins. On the 26th ult. another 149 kiloms. were completed, the stage which occupied an hour and a quarter, taking Chevillard and his passenger to Vasteras. On Monday he went to Upsala, a trip of 80 kiloms. In each place Chevillard made exhibition flights in his characteristic style.

Sweden to Germany by Aeroplane.

THE Swedish pilot Thuelin, on the 24th ult. succeeded in flying across the Baltic, from Landskrona in Sweden to Stralsmund in Germany, the voyage of 180 kiloms. occupying a couple of hours.

A German Fatality.

WHILE flying at Johannisthal, on the 26th ult., the machine of Lieut. Schulz fell a distance of about fifty metres, and the pilot was instantly killed.

Flying Along the Rhine.

STARTING from Lake Constant on a hydro-aeroplane on Saturday week, Dahm eventually arrived at Hamburg on the following Tuesday. During the first part of the trip, Dahm followed the winding course of the Rhine, and stopped at Cologne on Sunday and Emden on Monday.

Warsaw to Berlin Flight.

ON Friday of last week, Victor Stoeffler started from Warsaw, on the Aviatik-Arrow biplane on which a few days previously he had flown from Mulhausen, and made a non-stop flight to Johannisthal near Berlin, his time for the 550 kiloms. being 4 hrs. 2 min.

The Morocco Fatalities.

THE name of the French military pilot who was drowned when his machine fell into the Mediterranean off Mogador, on the 24th ult., as recorded in our last issue, was Lieut. Cazes.

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THE RHEIMS MEETING AND GORDON-BENNETT TROPHY.

NOTWITHSTANDING the fact that the Rheims Meeting of this year was shorn of a good deal of interest by reason of the abstention of several of the French firms, some very fine flying was witnessed on the three days, and Prevost twice beat his own speed records, and succeeded in averaging a speed of 200 k.p.h. for the full distance of 200 kiloms. in the Gordon-Bennett race. The meeting opened on Saturday last with the French Gordon-Bennett eliminating trials. There were originally eight entries, but the withdrawal of the Borels of Chemet and Daucourt, the Breguet of Bregi, and the Nieuport of Espanet left only four, viz., three Deperdussins piloted by Prevost, Gilbert and Rost, and a Ponnier with E. Vedrines as the pilot. They were set to cover 10 laps of the 10 kilom. course, or, in other words, half the distance of the Cup race itself. Prevost easily secured the premier honours in 31 mins. 22⅘ secs., equal to a speed of 191 k.p.h., with E. Vedrines second in 32 mins. 28 sec (184·8 k.p.h.), while Gilbert was third in 33 mins. 45⅘ secs. (178 k.p.h.); Rost, who took 37 mins. 4 secs., was nominated as the reserve. In the afternoon there were two competitions—one for height, and the other a slow speed event. In the former Parmelin on a Deperdussin, in the class for pilot alone, at 3,441 metres beat Legagneux on a Morane by 32 metres. In the pilot and one passenger section three Moranes were placed, Gilbert being first with 4,348 metres, Brindejonc second with 3,108 metres, and Garros third with 2,819 metres. Moineau with his Breguet won the pilot and two passengers class, going up to 1,562 metres, while Espanet on a Nieuport was second with 1,360 metres. In the slow speed contest the competitors first had to show that they were capable of a speed of 90 k.p.h., and then they had to cover a course 2 kiloms., and after a stop of 2 mins. fly back to the starting point, the slowest to be the winner. This proved to be Derome on a Breguet, whose slow speed worked out to 51·479 k.p.h., while G. Caudron was second with 57·358 k.p.h., and Legagneux (Morane) third with 58·042 k.p.h. with R. Caudron fourth and Gilbert fifth.

The programme for Sunday included three events: a speed test over a course of 30 kiloms., an altitude competition and a cross-country race. The day commenced with the qualifying tests for the speed contest, the competitors being required to fly out and home over a straight course at a speed not exceeding 68 kiloms. an hour. Half a dozen pilots qualified, including Cailleaux (Goupy), Moineau (Breguet), Caudron (Caudron), Brindejonc (Morane),

Legagneux (Morane), and Garros (Morane). The best performance was that of Moineau, whose average speed was 48 k.p.h., on the machine which in the actual race he flew at 113 k.p.h.—giving a speed range of 65 k.p.h. The winner of the speed event was Brindejonc, who completed the 30 kiloms. in 14 mins. 57⅕ secs. Moineau was second in 15 mins. 59⅘ secs., and Legagneux third in 16 mins. 13⅓ secs. Then followed the height competition, and much better performances were made than on the previous day. In the section for pilot only Gilbert went up to 5,795 metres, and Parmelin had to be content with second place at 4,276 metres, while Legagneux only did 2,583 metres. With two passengers, Derome went up to 2,298 metres, and Maicon (Caudron) was second with 714 metres. The last item was the cross-country race, in which the circuit Rheims, Vitry, Brienne had to be covered five times. The biplanes, of which there were four, were sent off first, and half an hour later the five monoplanes were started. In the biplane class, Gaston Caudron, whose biplane was fitted with a 100 h.p. Anzani, was first in 1 h. 35 m. 51 s.; while Rene Caudron, with a biplane with 80 h.p. Gnome, was second in 1 h. 52 m. 36s., and Moineau third. Among the monoplanes Rost was first in 1 h. 7 m. 18⅗ s., with Prevost second in 1 h. 19 m. 10⅘ s., and Parmelin third in 1 h. 25 m. 5⅘ s. All these pilots were on Deperdussins, and these machines, like all the biplanes taking part, were fitted with Chauvière propellers.

Overnight the weather conditions did not look very promising for the last day of the meeting, but when Monday morning dawned it turned out gloriously fine. A good deal of speculation was indulged in as to what would be the speed of the winner in the Gordon-Bennett race, it being recalled that three years ago, when Grahame-White brought the prize back from America, he took one minute over the hour for 100 kiloms. Would Prevost, the favourite, succeed in crowding 200 kiloms. into the hour? Great Britain, America and Germany having withdrawn from the contest, the only foreign representative was Crombez, on a Deperdussin, representing Belgium, and in the ballot for starting order he secured the right to be sent away first. He started away promptly, but it was soon seen that, barring accidents, the cup was not likely to leave France. His first round of 10 kiloms. was completed in 3 mins. 29 secs., and flying very regularly, he completed the full course of 20 laps in 1 h. 9 m. 52 s. which was 1 min. 3 secs. better than Jules Vedrines's time in his winning flight at Chicago last year, but, as it turned out, it was the slowest of the day. Prevost was the next to go at a quarter past eleven, and he started off at an alarming pace, and soon showed that the curtailing of the wings which had been done overnight had materially assisted the speed. The first round was completed in 2 mins., 56⅘ secs. at an average speed of 204 k.p.h., and this and the sixth lap, which was covered in the same time, were the fastest in the race. The second, third and fourth laps were each completed in 2 mins. 58 secs., the speed being 202·4 k.p.h. After the sixth lap the speed began to tail off, but the 20 laps were finished in 59 mins. 45⅗ secs., so that his average speed worked out to 200·5 k.p.h., or 124½ miles an hour. Gilbert started third, but his first lap, which took 3 mins. 2 secs., showed that his machine was a good deal slower than Prevost's, and it took 1 h. 2 m. 55 s. to cover the full course at an average speed of 192 k.p.h. Emile Vedrines, who was the last to start, went off at a great pace, and his speed during the first round, which took 2 mins. 59⅕ secs., averaged 200·8 k.p.h. He, however, could not keep it up, although his average speed per lap only once dropped below 195 k.p.h. He finished the course in 1 h. 0 m. 51⅘ s., so that his average speed worked out to 197·5 k.p.h.

The excitement of the day over, there were two other items to be contested—a 10 kiloms. speed test and the height competition. In the speed test the monoplane class was won by E. Vedrines in 3 mins. 57⅘ secs., and Parmelin was second in 4 mins. 27⅘ secs., while among the biplanes the Caudron brothers shared the honours, Rene being first in 5 mins. 11⅕ secs. and Gaston second in 5 mins. 50⅘ secs. In the height competition Gilbert was first in the pilot only section with 5,002 metres, with Parmelin second with 4,532 metres. In the pilot and one passenger section, Legagneux was first with 2,583 metres, while for pilot and two passengers Gilbert led with 3,638 metres, Bonnier (Nieuport) being second with 2,284 metres, and Maicon (Caudron) third with 2,228 metres. In the general classing for the three days, Gilbert led in all three sections with 5,795 metres for pilot only, 4,348 metres with one passenger, and 3,638 metres with two passengers.

THE GORDON-BENNETT RACE.

The Competitors.

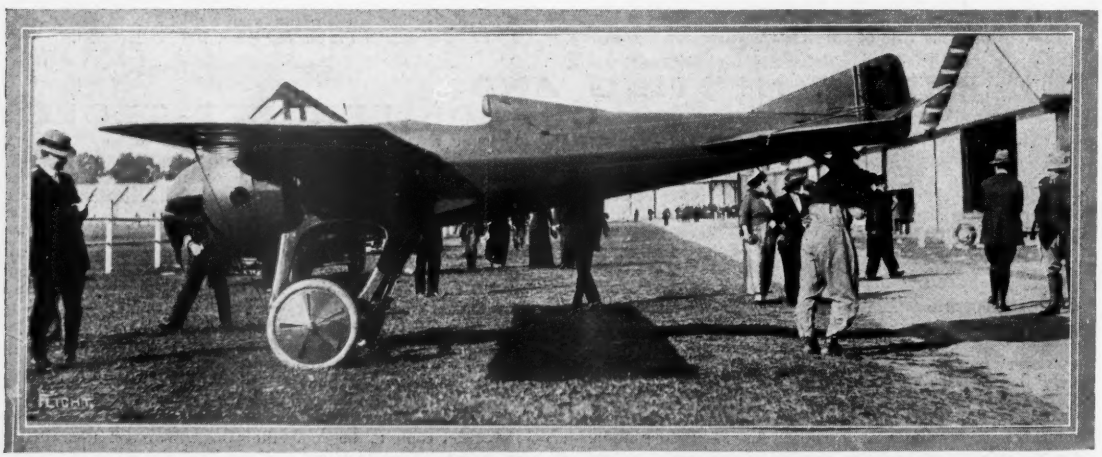
Place.	Pilot.	Machine.	Motor.	Propeller.
1	Prevost ...	Deperdussin	160 h.p. Gnome	Chauvière
2	E. Vedrines	Ponnier ...	160 h.p. Gnome	Chauvière
3	Gilbert ...	Deperdussin	160 h.p. Rhone	Chauvière
4	Crombez ...	Deperdussin	160 h.p. Gnome	Chauvière

The Cumulative Lap Times. The course was 10 kiloms. round.

	Prevost.		Vedrines.			Gilbert.			Crombez.		
Kiloms.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
10	2	56⅘	0	2	59½	0	3	2	0	3	29
20	5	54⅘	0	6	0⅘	0	6	7⅗	0	6	59⅕
30	8	52⅘	0	9	1⅘	0	9	15	0	10	29
40	11	50⅘	0	12	3⅕	0	12	22⅗	0	13	59
50	14	48½	0	15	5	0	15	31⅘	0	17	29
60	17	14⅘	0	18	7	0	18	40⅘	0	20	59
70	20	43½	0	21	8½	0	21	49	0	24	28
80	23	41⅘	0	24	10⅘	0	24	57⅗	0	27	57
90	26	40⅘	0	27	12	0	28	6⅘	0	31	25
100	29	40	0	30	14	0	31	17	0	34	54
110	32	39½	0	33	17	0	34	26	0	38	22
120	35	38⅗	0	36	20	0	37	36	0	41	51
130	38	38⅘	0	39	23	0	40	46	0	45	19
140	41	38½	0	42	25⅗	0	43	57	0	48	49
150	44	38	0	45	30	0	47	6⅘	0	52	19⅕
160	47	38⅘	0	48	34½	0	50	15⅕	0	55	49
170	50	40½	0	51	38	0	53	25	0	59	19
180	53	41⅘	0	54	43⅘	0	56	35⅘	1	2	51⅘
190	56	43	0	57	47	0	59	45⅘	1	6	21⅘
200	59	45⅗	1	0	51⅗	1	2	55⅗	1	9	52

The New Speed Records.

	Sept. 27.	Sept. 29.		Sept. 27.	Sept. 29.
	m. s.	m. s.		h. m. s.	m. s.
10 kiloms...	3 9⅕	2 56⅘	50 kiloms...	0 15 40⅘	14 48½
20 ,, ...	6 17⅘	5 54½	100 ,, ...	0 31 22⅗	29 40
30 ,, ...	9 25⅘	8 52⅘	150 ,, ...	0 52 52⅘	44 38
40 ,, ...	12 32⅘	11 50½	200 ,, ...	1 10 55⅗	59 45⅗
¼ hour	50 kiloms.	½ hour	100 kiloms.	1 hour	200 kiloms.



Prevost's Deperdussin, the winner for France of the Gordon-Bennett Trophy, competed for this year at Rheims. Prevost's average speed was over 124 miles per hour.

Edited by V. E. JOHNSON, M.A.

Pegoudism. From an Aeromodellist's Point of View.

HAD anyone told the writer a short time ago that on September 27th he would be lying flat on his back at Brooklands gazing vertically upwards through a pair of field glasses at an aeroplane executing a spiral *vol plané*, with respect to which he appeared to be in the exact axis, and that to that aeroplane would be fastened, of his own free will, a live, sane man, so directing this machine that, in popular language, it was executing this evolution upside down, he would naturally not have believed him. Had he also been told that he would have seen other evolutions just as remarkable, and carried through with just the same unerring judgment, coolness, and, above all, perfect confidence, he would have declined to listen to them. If, in addition to the above, he had also been informed that when lying flat on his back with the above-mentioned machine, to all appearance hurling itself vertically straight for him, he would not have felt the slightest thrill of uneasiness either for the man and machine up aloft or for himself on the ground, he would certainly have felt that this was the last straw; and had he been in a patient and amiable mood, he would have informed the person as politely as he could that he considered his prophecy somewhat replete with terminological inexactitudes. Had the mood not been a patient and amiable one, the expression would have been shorter and the adjective stronger.

And yet—incredible as it seems—the prophecy would have been true to the letter. The apparent impossibility has come to pass, and quickly, too, at that. What every expert aeromodellist, who can make his model perform, practically speaking, all the evolutions executed by Pegoud at Brooklands, desired to know above all things was: How far are these things possible with full-sized machines? No theoretical reasons could be brought forward why they should not be possible, rather the reverse; but theory is not practice always, and the laws of similitude, although the ordinary person is quite prepared to discuss them on paper or to put them into practice where there is no apparent risk, are not such that he is prepared to put his deductions to a practical test in which a false conclusion means certain death.

So far as the aeromodellist was concerned there was apparently no prospect of his experiments being repeated on a full-sized scale until some one came forward prepared to spend tens of thousands of pounds in carrying out ordinary model experiments on a full-sized scale in machines fitted with automatic instruments of marvellous precision, reliability and exactness. The reason being that it appeared opposed to all human credibility that any man could be found who could *perfectly* (it is necessary to lay full stress on this word) eliminate the personal element when and where necessary.

Such a man is Pegoud, incredible as it may seem. Having set his machine (not himself) a certain experiment (whatever we call it, do not let us term it a "feat" or "performance," still less that horrible term known as "stunt"), he possesses such perfect confidence in his machine first and himself afterwards, that having so adjusted matters that a certain evolution must of necessity take place; he is capable of absolutely eliminating the human element while that evolution is being carried out, and also of reasserting it at the psychological moment to change that evolution, abnormal if you like in itself, into one which shall of itself bring his machine into a normal position once more. I have referred to Pegoud's perfect confidence; now, curious as it may at first sight seem, this confidence is also shared by the spectators of his experiments. Whatever qualms or misgivings one may feel *beforehand*, while he is actually carrying them out, they all disappear as if by magic. So much so is this the case that side by side with the intense scientific interest with which one watches these experiments, one can simultaneously see the humorous side as well, and one finds oneself actually smiling or even quietly laughing and reflecting: "Well, really, you know, but this *is* droll." "Stunts" don't affect you in this way—quite the reverse.

Broadly speaking, an expert aeromodellist can make his machine accomplish all that Pegoud allows his full-sized machine to do; for instance, he can make it loop the loop (motor, of course, running, as in Pegoud's final loop on Saturday), fly upside down, &c. It is, of course, obvious that such results are not always brought about by the same means as Pegoud adopts, and readjustments and resettings are necessary to bring them about; but none of these affect the main issue which is this.

The experiments of aeromodellists have shown that correctly designed model aeroplanes are naturally stable in a very remarkable degree, and that if temporarily upset in any or every conceivable way they will invariably recover themselves, provided always that the circle of their natural radius of recovery has no obstacle, such as the earth, &c., as tangent. Pegoud's experiments show that the same thing is true of full-sized machines generally speaking. Many aeromodellists felt quite certain in their own minds that this was so; none, I feel sure, could have expected so early a practical proof of the same.

The debt which aeromodellists owe to Pegoud can, in the writer's opinion, scarcely be over-estimated. Surely nothing could have happened calculated to give them greater encouragement. Regarding the matter for a moment from the other side, is it too much to hope that experiments with models will now be regarded as worthy of more attention and recognition from designers and builders of full-sized machines? Experiments, I mean, which shall have for their aim the investigations of the various laws of similitude, &c., which do undoubtedly apply between model and full-sized work.

English model yachting has just scored a wonderful triumph at the first international meeting just held in Paris—not London. As a matter of fact, the English boats, literally speaking, swept the board, winning not only the international championship, but every race for which they were entered, the French, Belgians, &c., being simply astounded at the running shown in the motor boat class.

Let us sincerely hope that the new cult of Pegoudism, which is now bound to come, will bring about, the sooner the better, another model international meeting, of an aviation character this time, in which English aeromodellists may have a similar opportunity of *sweeping their board*, whether the meeting be held in England or abroad.

Another model yachting triumph, greater in a sense than the above, is that a most successful yacht has just been built which was designed purely as a result of certain experiments made with models. When we can record similar and even greater model aviation triumphs than those just referred to in the case of yachts, we shall feel that model aviation has not been stimulated and encouraged in vain.

The sensation experienced by the writer whilst watching Pegoud at Brooklands was, not that he was looking at a machine and a pilot at all, but that he was gazing at a large model fitted with an intelligence which was mechanically perfect, and that so long as nothing collapsed or broke under some sudden or undue strain failure was impossible.

Physically strapped to his machine as he is, Pegoud and his machine are one; mentally he also appears to be part and parcel of it, and in this sense one sees here that apparently impossible thing, a mechanical device, which is different from all other mechanical devices in that it is imbued with an intelligence all its own. What new and valuable information may we not hope to learn from such? The amazing part being not what Pegoud does so much as what he must refrain from doing, or trying to do, whilst executing his various aerial evolutions.

The Single Propeller Hydro Competition.

This competition, which was held on Rushmere Pond, Wimbledon Common, on September 20th, although it did not attract a very large number of entrants, possessed not a few points of especial interest. The water, more especially during the earlier stages of the contest, was decidedly rough, and severely taxed the ability of the competitors to get their models to quit its surface, fitted as they were with only one propeller. The competition finally resolved itself into a contest between Mr. Slatter's Canard type model and Mr. Dutton's tractor hydro-aeroplane, in which the former won by 5 secs. Both models were remarkably steady, and both gained high marks in this respect. At the end of three rounds, no one else having accomplished the necessary qualifying 15 secs. duration, another round was decided on (for third place only), when Mr. Jannaway succeeded in making a good steady flight of 23 secs. duration.

Mr. Weston also accomplished some good flights, but not, unfortunately for him, with the machine he entered for the competition. To turn up with two machines, and to decide and finally fly the wrong one is certainly what is usually described by the schoolboy as "hard lines."

Several of the competitors never succeeded in getting their machines to quit the surface of the water; generally speaking it was a case of insufficient tuning up.

Next week we shall give particulars and illustrations of some of the machines.

KITE AND MODEL AEROPLANE ASSOCIATION.

Official Notices.

British Model Records.

Twin screw, hand-launched	Distance	R. Lucas	590 yards.
	Duration ...	A. F. Houlberg ...	129 secs.
Single screw, do.	Duration .	H. Bedford ...	49 secs.
Twin screw, rise off ground	Distance ...	L. H. Slatter ...	365 yards.
	Duration ...	J. E. Louch ...	2 mins. 49 secs.
Single-tractor screw, hand-launched	Distance ...	C. C. Dutton ...	266 yards.
	Duration ...	J. E. Louch ...	68 secs
Do., off-ground	Distance ...	C. C. Dutton ...	190 yards.
	Duration ...	J. E. Louch ...	45 secs.
Single screw hydro., off-water	Duration ...	L. H. Slatter ...	35 secs.
Single-tractor, do., do. ...	Duration ...	C. C. Dutton ...	29 secs.
Twin screw, do., do. ...	Duration ...	L. H. Slatter ...	45 secs.

Official Trials.—The usual monthly official trial was held on Sept. 27th on the ground of the Leytonstone Aero Club. Mr. A. F. Houlberg attacked the h.l. duration record, which was held by Mr. L. H. Slatter with 111 secs., and which he successfully raised to 129 secs. Mr. J. E. Louch, of N.E. London Aero Club, attacked the r.o.g. duration record, which also was held by L. H. Slatter with 2 mins. 11 secs., and he raised same to 2 mins. 45 secs. with a splendid flight. Mr. H. Bedford established a new record for single-screw h.l. machines with a duration of 49 secs. The official observers were Messrs. H. G. Bond (N.E. London), F. Grattan (Leytonstone Aero Club), F. Mayer and the hon. sec.

Competitions.—To-day, Saturday, October 4th, novices' duration contest will be held on Wimbledon Common at 3 o'clock.

Model Competition at Welsh Harp, Hendon, on October 18th, at 3 o'clock. Entries close Saturday, October 11th. Duration and stability competition for hydro-aeroplanes. Prizes: 1st, rose bowl; 2nd, silver medal of the Association; 3rd, bronze medal of the Association. Tests: A. Duration of flight; B. Stability. Maximum marks, 100.—60 for test A, 40 for test B. Rules: 1. Competitors must be at the judges' flag at 2.45; any competitor not present at that time will be disqualified. 2. Models must not weigh less than 16 ounces. 3. Competitors will be allowed to make reasonable repairs at the discretion of the judges. 4. Competitors will not be allowed to replace any part without the permission of the judges. 5. Each competitor is entitled to three trials. 6. All competitors must launch their machines in the same direction. If less than 5 starters the 3rd prize will be withheld. Non-competitors, admission 3*d*., payable at gate only.

Kite Competitions in Belgium.—On Sunday, Oct. 19th, the Delta Club of Belgium will hold a kite meeting at Brussels. It will consist of contests for amateurs, professionals and juniors, and the marks will be awarded much on the same lines as this Association's contests. The hon. sec. will be pleased to send full details to anyone wishing to go over. Entries close Oct. 15th. Return fare is 29*s*. 6*d*. Train leaves Charing Cross at 2 p.m. on 18th.

27, Victory Road, Wimbledon. W. H. AKEHURST, Hon. Sec.

AFFILIATED MODEL CLUBS DIARY AND REPORTS.

CLUB reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Aero-Models Assoc. (N. Branch) (25, CHURCH CRESCENT, MUSWELL HILL, N.).

OCT. 4TH, practice, 3 p.m., 5th, 10 a.m. Oct. 9th, indoor meeting, and duration and stability competition for paper gliders.

Monthly Report.—This month members are concentrating their efforts on machines for the Enfield Cup competition (Duration and Stability, r.o.g.), which will be flown off at 3 o'clock, Nov. 1st. Two or three members are turning their attention to power-driven models, and generally the 1-1-0-P2 and 0-1-1-P2 are being abandoned in favour of less standardised and more interesting types. Last month, about half a dozen new machines made their appearance, and a fair amount of useful work was carried out. Three indoor meetings were held, and these seem likely to become a popular feature. August 30th, two records went by the board, Mr. C. C. Dutton, of the Paddington Club, obtaining 266 yds., h.l., and 190 yds., r.o.g., with his twin-geared tractor. At meeting, Sept. 11th, a discussion was held on the design of machines within a weight limit, 5-6 ozs. Mr. Dann showed an interesting 5-cylinder steam engine of 2 ozs. weight. At the third meeting, on the 25th, we received a visit from Mr. Kerruish, of the Brighton and Hove Club, who described a power-driven model of his construction, and of decidedly original design, which he promised to bring up on the 27th. Members present were: Messrs. McBirnie, Coleman, Bond, Dann, Murray, Corder, Ridsley, Ross, and Hindsley. Others flying, at Finchley, C. C. Claplin, twin 1-1-0-P2 machines, one with straight dihedral, and the other with upturned wing tips to compare stability, &c., of the two systems, duration about 60 secs., r.o.g., with each; also 4½ oz. tractor, best duration 36 secs., H. R. Weston, 6 oz. geared tractor, 30-40 secs., very fast, steady flier, a 1-1-0-P2 A-frame. F. G. Hindsley, good distances and duration with a 5¼ oz. 0-1-1-P2; also 2¾ oz. tractor, now fitted with 8 in. screw, duration, 41 secs. (10 secs. glide), distance, 250 yds., apparently quite non-capsizable. H. D. Murray (1-2-0-P2), T. W. Dann, 7⅔ oz. 1-1-0-P2 A-frame, 36 ins. long; a sound engineering job, which, after 3 weeks' trials has reduced its weight to 5 ozs. S. F. Bond 42 by 30, 6½ ozs., 1-1-0-P3, hollow spar, 11 in. carved props. An all-day struggle between Messrs. L. Losh and H. E. Fletcher, on the 21st, flying similar 4 oz. models, but 1-1-0-P2 and 0-1-1-P2 respectively, resulted in a draw, each finally obtaining 89 secs. h.l. Mr. Fletcher's model, fitted with chassis, won the monthly competition with 61 secs., r.o.g. Mr. McBirnie, second, with 59 secs., obtained with a lightly loaded "Bermac" model, type 1-1-0-P2. Others flying were, Bond, new 9 oz. 1-1-0-P2, 48 in. hollow spar, 36 in. span; Knight, 0P-1-1; Coleman, 1-1-0-P2; Kerruish, 1-1-0-P2; Rogers, 0-1-1-P2.

Leytonstone and District Aero Club (64, LEYSPRING ROAD).

ON October 5th the competition for Mr. Kimpton's prize will be held. Members will meet on Wanstead Flats (near Brickfields). The competition will start at 10 a.m. Also on this occasion a photograph of the club is to be taken, so it is hoped there will be a good muster. The second annual general meeting will be held at 64, Leyspring Road, on October 8th; commence at 7.30 p.m.

Monthly Report.—The competition to improve club's duration ended on September 28th. The only club record prior to the competition was 43 secs. hand launched. Last month this was quickly raised to 87 secs. by Mr. Bedford and Mr. Chas. Hersom. Mr. Bedford also obtained 65 secs. off ground. On the closing day, Mr. F. Hawthorn obtained 70 secs. off ground and Mr. H. Bedford 99 secs. hand launched. Mr. Hawthorn therefore wins the medal for duration off ground and Mr. Bedford for hand launched. Mr. Wm. Hersom has also been getting good duration both r.o.g. and h.l. Messrs. A. Hoare, G. Pitt and F. E. Grattan have been making attempts, but have not obtained such high duration. At the K. and M.A.A. trials held on this club's ground on September 27th, Mr. J. E. Louch—who is now a member of the Leytonstone and District—beat the British record for r.o.g.'s by 38 secs. Mr. Louch's model remained in the air for 169 secs. Mr. H. Bedford obtained 49 secs. hand launched with a single screw behind model. It is expected that this will establish a new British model record, although the performance was by no means good. Flying the same model previously Mr. Bedford obtained several flights with it of about 100 secs. duration, the best being 103, 45 secs. of which was glide with propeller stopped. Mr. Bedford has also been obtaining good flights with an 8-oz. hydro. Mr. N. Bond, late of the N.E. London Club, has been flying regularly, and has had some fine high flights with good duration both off ground and hand launched. Mr. F. Grattan has been flying r.o.g.'s, and Mr. F. Hawthorn with r.o.g.'s has been obtaining good long distance. Messrs. W. Patmore, H. Bardwell, A. Hersom, G. Pitts and H. Riggs have also contributed during the month, and Mr. Thos. Kimpton has been experimenting with wings for stability.

Paddington and Districts (77, SWINDERBY ROAD, WEMBLEY).

OCT. 4TH, club will be represented in novices' competition on Wimbledon Common. Other members flying at Sudbury as usual.

Monthly Report.—The run of success in open air competitions and official trials which has been a characteristic feature of the club during the present season continues unchecked. On Sept. 13th the silver challenge cup and Gold Medal of the K. and M.A.A. for distance and stability was won by Mr. C. C. Dutton, who scored 95 marks, his distance being 558 yds. The same member followed this success up a week later by winning a cup, presented by Mr. G. Rowlands, for second prize in the single-screw hydro-aeroplane competition, held on Wimbledon Common. His model was the only single-screw tractor model in the contest and his duration of 29 secs. stands as a record for this type. Of club competitions the gold medal for 8-oz. r.o.g. models takes premier place. This was held on Sept. 6th, under unfavourable wind conditions, with the result that durations were lower than usual. The performances were, however, fairly consistent, with the following results: 1st prize, gold medal, Mr. A. Cannell with duration 63 secs.; 2nd prize, silver-gilt medal, Mr. H. Weston, 56 secs.; 3rd prize, silver medal, Mr. R. Bird, 50 secs.; 4th prize, bronze medal, Mr. T. Carter, 40 secs.; Mr. W. Evans, 5th, 37 secs.; Mr. C. C. Dutton, 6th, 31 secs.; Mr. H. Woolley, 7th, 30 secs.; Mr. F. W. Johnson, 8th. Mr. Alfred Perkins, the president, kindly rendered service by taking the times, and after inspecting the prizes, generously offered a similar prize for a future contest. On Sept. 13th one of the usual r.o.g. handicaps was held, with two cash prizes. Mr. F. W. Johnson was first with 66 marks; Mr. W. Evans second with 65 marks. The result of a similar handicap on Sept. 20th, was: 1st, Mr. W. Evans, 67 marks; 2nd, Mr. F. W. Johnson, 66⅝. Mr. D. Driver scored 64⅜, and Mr. T. Carter, 42. In another handicap on Sept. 27th, the first prize was a silver medal, presented by Mr. C. C. Dutton, which was won by Mr. H. Woolley with 87⅝ points. His model was 4 ft. long and 4 ft. span, with an A-frame composed of D section hollow spars. The second prize, a hollow oval spar, was won by Mr. F.W. Johnson, who scored 71⅜ points. This member has made remarkably steady improvement of late and must now be classed amongst the club's best flyers. The remainder of the competitors paid a compliment to the handicapper, the scores being: Mr. M. Levy, 70; Mr. T. Carter, 69⅜; Mr. D. Driver, 69, and Mr. W. Evans, 68. As a result of the rapid advancement of model flying during the present season the committee deemed it expedient to raise the standard of qualification for club certificate. These are now as follow: 2nd class certificate, 50 secs. h.-l. or 30 secs. r.o.g.; 1st class, 89 secs. h.-l. or 60 secs. r.o.g., and superior, 100 secs. h.-l. Notwithstanding the increased severity of the tests, however, three members succeeded in obtaining their 1st class *brevets*, viz., Messrs. Bird, Carter and Dutton, who each did more than 60 secs. r.o.g., whilst two members secured 2nd class *brevets*, viz., Messrs. T. Carter and M. Levy. Another inter-club contest with the Aero Models Association will shortly take place to decide the rubber.

Reigate, Redhill and District (THE COTTAGE, WOODLANDS AVENUE, REDHILL).

OCT. 4TH, Flying on Earlswood Common. Novices' Competition has been arranged for Nov. 1st, r.o.g. machines, biplane or mono. optional, 6 oz. minimum weight, duration.

Monthly Report.—The chief event of month was the competition for the Rawson Cup, on Sept. 13th. Single screw tractor r.o.g. monos. were flown—Conditions, 6 oz. minimum weight, 6 ozs. to 1 sq. ft. minimum loading, and duration. Mr. Sutton was the winner, with 18½ secs., Mr. Burghope second, 16 secs., Mr. Norton, 14½ secs., and Mr. Key, 12 secs. The "loading" condition, coupled with duration, proved to be an incentive to building a good all-round model, and had the effect of bringing out models which were very equally matched. It would be interesting to find more competitions run on these lines. The cup was presented afterwards at headquarters amid usual jollification. The winner was also presented with silver medal, and second with bronze. Mr. Key has made a club record for tractor r.o.g.'s, with a flight of 32 secs. Mr. Burghope out with his "Rawson" tractor, which is 8¾ ozs., span 38 ins., length 31 ins., 12 in. screw, 18 in. pitch, loading 6·63 ozs. to 1 sq. ft., best flight, 30 secs. over 200 yds., about 40 ft. up, gets off nose down, climbs well perfectly flat, descends gradually, lands well. Also out with 7 oz. r.o.g. mono. Canard, with 400 yds. 9 oz. r.o.g. biplane, about 100 ft. high, fine flyer. Mr. Sutton, in tuning "Rawson" tractor, testing different screws, found 11 in. suited better than 12 in., got good flights. Mr. H. Jordan, flying 9½ oz. r.o.g. biplane on 23rd in high wind, getting 20 secs. and over, found machine very steady in wind, owing, no doubt, to turned up tips; out with same on the 27th, getting 30 and 38 secs., and up to about 100 ft., landing with fine glides. Mr. Horton making trials with 4 oz. biplane, which climbs well and shows good promise. Mr. Hoyle tuning up new r.o.g. biplane, 9 ozs., gets off in four yards, very stable, gets 30 secs. and 200 yds. frequently; has since tested helical propellers instead of compounds, with not such good results. Mr. L. V. Hall tuning up 4 oz. h.l., which will be good when tuned. Social tea has been held on occasion of Mr. Hope (vice-president), leaving the district. Mr. Hope has presented club with fine lathe.

Sheffield Aero Club (35, PENRHYN ROAD, SHEFFIELD).

Monthly Report.—Aug. 30th, at the Standhouse aerodrome, Intake, a contest was held to decide representatives for the City on Sept. 13th, for the Association's challenge cup and gold medal for r.o.g. machines. Mr. W. H. Bagshaw's machine reached a distance of 354 yds., only 11 yds. behind the British record. He was selected to represent the club in London. Afterwards attempts on club records were made. Mr. Askwith's r.o.g. made 61⅜ secs. duration, and reached a distance nearly as great as that of Mr. W. H. Bagshaw. Mr. R. E. Raynor with hand-launched machine obtained 591⅓ yds. and 93⅜ secs. duration. He has been awarded a first-class certificate for this record. The three members succeeded in raising the club and Sheffield records, and Mr. Raynor beat the British record. The following gentlemen officiated as judges: Messrs. C. F. W Cudworth, Bagshaw (senr.) and J. W. Healey. Timekeeper, Mr. H. Slack. Sept. 1st, at general meeting at club room. Mr. H. Slack presiding. With the approval of Mr. Colver, the "Colver Cup" and "The President's Challenge

Cup" rules were altered to the following: "Colver Cup," rule 5. The machine flying the longest duration to be adjudged the winner. 6. The minimum duration to be 45 secs. 7. The maximum weight limit of rubber to be 2 ozs. "The President's Challenge Cup," rule 5. The machine to weigh at least 4 ozs. with rubber. Sept. 20th, Mr. R. E. Rayner raised the club and Sheffield record for r.o.g. duration to 70 secs.

Wimbledon and District (165, HOLLAND ROAD, W.).

OCT. 4TH and 5th, flying as usual.

Monthly Report.—Great activity throughout month, tractor models in particular having received much attention, seven new machines having been out. Mr. J. Dolittle has flown one of his "Gnat" models, getting it up to a good height; Mr. D. Easdale's tractor with Dunne type plane shows great stability; Mr. F. Whitworth's hollow spar, geared motor flies very high, averaging about 40 secs., hand-launched; Mr. D. Laing has succeeded in raising the tractor records to 50 secs. r.o.g. and 64 h.-l. This machine is 3 ft. long, weighing about 5 ozs., and is a slow flyer, the power being supplied by two skeins of 3-strands ¼-strip, geared together, driving a 10-in. diameter screw. Other tractors have been flown by Messrs. F. Wilkinson, N. Waghorn and L. G. Tucker. Much flying has been done with r.o.g. models. Mr. Connelly's new machine has shown itself a fine flyer, the best duration being 74 secs. Other r.o.g.'s have been flown by Messrs. L. Tucker, F. Hutcheon, S. Smith, Wilde-Smith and others. In the competition for the Association's Cup at Greenford on Sept. 13th, Mr. Slatter took 2nd place and Mr. D. Laing 6th. In the junior distance competition at Wimbledon on Sept. 20th, Mr. F. Wilkinson took 2nd place with a flight of 382 yds., Mr. F. Hutcheon 3rd with 161 yds., and Mr. L. G. Tucker 4th with 148 yds. In the competition for single-screw hydros. held on Rushmere Pond on same date, Mr. Slatter took 1st place with his "Canard" model, his best duration being 35 secs., which constitutes a record for this type of model. On the Cody Memorial Day at Earl's Court, Mr. Slatter gave a display with a twin-screw hydro., but owing to the limited space available, not much in the way of duration was attempted; the flights, however, aroused great interest. Mr. Gregg has had out his single-screw hydro. on the Rushmere, but has not yet been able to get it to rise, though the machine is very steady on the water. Mr. F. Powell has flown his hollow-spar h.-l. machine, 0-1-1-P2 type, averaging 85 secs. On Sept. 21st, Mr. A. F. Houlberg was tuning up a h.-l. model, and obtained some fine flights at a great altitude, the best duration being 101 secs. Flying in the official trials at Leytonstone on Sept. 27th, he succeeded in raising the h.-l. duration record to 129 secs.

UNAFFILIATED CLUBS.

Brighton and Hove (59, WESTBOURNE GARDENS, HOVE).

OCTOBER 4th, flying at Jack Aerodrome, 3 p.m.

Monthly Report.—Excellent flying during September. Tractors particularly to the fore, Messrs. Barca, Akers, Hervey, Kerruish and Williams all making good flights, some of them being remarkable for both altitude and distance. Mr. Akers with r.o.g. obtained 50 secs. duration. Mr. Hervey (0-1-1-P2 r.o.g.). At Overflow the hydro. tests were very satisfactory; Messrs. Barca, Akers and Hervey all succeeded in rising off at first attempt. Mr. Williams testing Curtiss tractor type of flying boat. Mr. Young's bat-boat will be ready for trial next week. Among others making good flights were Allen (0-1-1-P2) and Tugwell with sundry types. Messrs. Kerruish and Williams are about to start a series of researches into aerodynamic theory and practice. These will probably extend all through the winter and results will be embodied in communications to FLIGHT.

Croydon and District Ae.C. (158, HIGH STREET, CROYDON).

Monthly Report.—The workshop is now in full swing and some very interesting models have been made. A large biplane is being built by Mr. Bell, and it will practically be a scale model of an H. Farman biplane when finished. Tractor monoplanes are being made by Messrs. Carter, Smither, Pavely, Finnigan, Horrocks and Hart.

During September the following members have been out with—1. Hydros: Messrs. Bell, Hart, Carter, C. Smither, H. Smither, and Pavely. A duration competition was held on the 7th, and won by Mr. Pavely with his 11⅜ oz. hydro. monoplane. His time was 46 secs. out of sight. His model disappeared behind some high trees when going well, and one is justified in thinking that he obtained at least 55-60 secs., as his model is a fine glider. Mr. Bell was second with 32 secs. His model is a very stable flyer, and is fitted with flexible planes. 2. R.o.g. (not tractors) Messrs. Bell, Carter, Smither, Mullins and Finnigan have all had good flights. Their models were made more for spectacular flights than for any great distance or duration. Mr. Bell has had flights of 60-70 secs. duration off ground. His model is one of the highest flyers yet seen at Mitcham, and finishes its flight with a splendid glide. Mr. Mullins and Mr. Bell have also obtained distances of about 300-400 yds. 3. Tractors have been flown by Messrs. Bell, Pavely, Mullins, Carter, Smither Bros., and Hart, with varying success. A competition was held on the 21st for distance (off ground) and won by Mr. Pavely. He has had durations of 40-45 secs., and distances of 250-300 yds. On Oct. 5th a similar competition will be held. 4. Hand-launched models: Very few hand-launched models have been made, but Messrs. Bell, Mullins and Carter have had fine distance and duration flights with biplanes, and Messrs. Smither and Horrocks with monoplanes.

Handsworth Aero Club (222, LOZELLS ROAD, HANDSWORTH).

Monthly Report.—Members have been meeting every week-end at the Waston Fields, and have been steadily improving. Mr. Southwick was flying a 3-ft. single propellered r.o.g. monoplane, Mr. Haycock a small tractor mono. having a very short motor rod, Mr. Jones several times got the ¼ mile, and Mr. Bates 300-400 yds.

Liverpool Aero Research Club (62, CEDAR GROVE, LIVERPOOL).

OCT. 4TH, handicap duration competition for certificate.

Monthly Report.—First general meeting Sept. 19th, when the provisional committee members were elected. Model flying demonstration took place, Sefton Park, Sept. 20th. A. G. Pugh and G. H. Kilshaw out with twin racers, doing about 50 secs. The Kilshaw tractor monoplane made a few short flights, getting off after a fairly short run and flying steady, Mr. B. Tear was also present with an r.o.g. "Canard," his "Mann" mono. flying well. Sept. 23rd, general meeting, at which it was decided that the club starts officially on Oct. 4th, the fee per annum for the ordinary model section is 5*s.*, or 2*s.* 6*d.* per half year, being then due. Qualifying tests and subscription for the "scientific" section will be discussed at the next meeting, together with other matters relative to same. Sept. 27th, members attended the "Cody Fund" Flying Meeting at Aintree.

Manchester Model Ae.C. (890, CHESTER ROAD, STRETFORD),

OCT. 4TH, meeting at Trafford Park aerodrome, 3 p.m.

Monthly Report.—Very little to report for last month owing to holidays. R.o.g. machines have been mostly in evidence. Mr. Kenworthy passed for his first-class certificate. On Sept. 27th the club met the Sheffield Aero Club in an r.o.g. duration contest, which resulted in a fine win for the S.A.C., their average being 68⅛ secs. to our 40 secs. Mr. Askew raised their r.o.g. duration record to 81 secs., while Mr. Watson raised the M.M.A.C. record to 50 secs.

Scottish Ae.S. ("ROCHELLE," LIMESIDE AVENUE, RUTHERGLEN).

DURING winter months, meetings will be held fortnightly. Oct. 4th, members attending Edinburgh Model Aero Club's meeting; attempts at records. Oct. 18th, hydros and tractors, etc., at Maxwell Park. Members are requested to take a note of these dates.

Monthly Report.—Since the beginning of the month, members have been busy constructing new models for the hydro. competition, held Sept. 20th, for the Silver Medal kindly presented by Col. J. A. Sillars. Owing to inclement weather none of the models were tested before the competition day. Among the spectators were Lord Rowallan and his son, who were extremely interested in the models. Lord Rowallan very kindly offered to present a Cup for competition to the club, which we had much pleasure in accepting. Sept. 20th: Mr. C. F. Arthur had out a new elevator type hydro., fitted with four floats of a new type, weight complete 14 ozs. Other models were: Mr. J. Mills' hydro-biplane, tail behind type; Mr. J. Donaldson's tail-behind type, fitted with floats of a unique design and construction, fastened to the chassis in an entirely new manner; Mr. W. Foster's old hydro. of the elevator type; Mr. C. Boyd's new hydro., weight 4 ozs. complete, and also an r.o.g.; Mr. Graham's new hydro.; Mr. I. Ross's single screw tractor. Mr. J. C. Balden's new hydro. tail-behind type, weight complete 14 ozs., has got off several times, and on one occasion flew three-quarters of the way across the pond. The winner of the competition was Mr. J. C. Balden, with Mr. C. F. Arthur a good second.

S. Eastern Model Ae.C. (1, RAILWAY APPROACH, BROCKLEY).

OCT. 4TH, flying, Woolwich Common, 4.30 to 6.30 p.m.; 5th, Blackheath, 7.30 to 10 a.m. Lee Aerodrome, 10.30 a.m. to 12.30 p.m.

Trophy Competition.—The final round of the second quarter of the South Eastern Trophy Competition produced a very hard-fought sporting contest. So closely were the models matched that at no stage of the proceedings was it possible to forecast the winner. In the end it resulted in a well-earned victory for Mr. Plummer (of the Beckenham branch), with Messrs. Chinnery and Westwood as runners-up. As stipulated in the rules (published in these columns on July 27th), the competition was for models of the tractor type, with a built-up *fuselage* and a minimum weight of 1 lb. As may be expected the competing machines were of quite a respectable size, and, without exception, presented a very realistic and workmanlike appearance, in fact they were really scientific models and not toys. No doubt this is the reason why many members who had built very promising models were unable to get them tuned up in the short time they left for that operation. Mr. Plummer's model won with a fine high flight of 25 secs. duration, with the runners-up a few seconds behind.

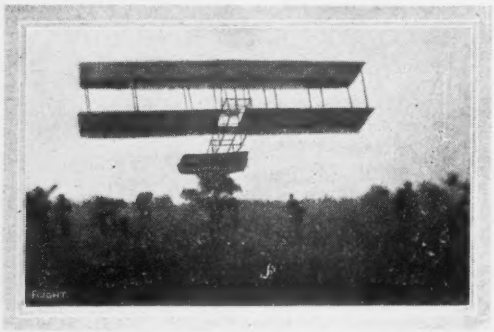
Monthly Report.—Principally owing to the Trophy Competition, the past month has been a very busy one, so much so that it is impossible to give here a detailed account of the work done, but a brief description of the machines which distinguished themselves in the competition will no doubt be of interest.

When building his models, Mr. Plummer makes it a practice never to sacrifice strength for lightness; consequently his monoplane looks, and is, a strong, well-designed scientific model. Despite its comparatively large span, the plane is made of wire, with slightly negative tips, and is braced to a rather ingeniously constructed *cabane*, which can be slid backwards and forwards and so warp the wing. Although the plane is thus stayed, enough flexibility is left at the tips to give the model a certain amount of automatic stability. The chassis is of rather rigid construction, which is somewhat compensated for by the wheels being attached by means of wire springs. Mr. Chinnery's model was one of his well-known "Gull's Wing" monoplanes, and in its qualifying test attained a duration of 22 secs. To the perfecting of this type of automatic-stability model, Mr. Chinnery has practically confined his attention during the past two years, and he has evolved a chassis which almost "stands up" to anything. The monoplane entered by Mr. Westwood was slightly larger than the preceding two, and flexibility seemed to be the keynote to its construction. It is chiefly remarkable from the unusual width of the *fuselage* (composed of four members), but otherwise is almost identical with its smaller predecessors. One of the most interesting entries was Mr. R. W. Prance's scale model Morane-Saulnier monoplane, which presented a most businesslike appearance, the plane, tail and fin being double surfaced, and the *fuselage* enclosed. A complete set of controls and the pilot's cockpit was also fitted. Unfortunately while being tuned up prior to the competition it side-slipped on to the wing tip, cracking a rib. This disqualified the model, for one of the rules was that all models at the completion of their tests must be in an undamaged condition. This fate also befel Mr. Nicholls, whose mono. did a spiral dive and broke its chassis, which was an exact replica of that used on the Martinsyde monos. A very fast-looking machine was entered by Mr. Peters, but did not aquit itself as well as was expected. During the month Mr. Brown has been putting in very good work with tractor monoplanes and "A" frames, all of them having a terrific velocity, in fact they were quite the speediest 'buses ever seen on Blackheath. Mr. Evans has been persevering with his r.o.g. "A" frame, also Mr. Morgan, whose model, though rather ancient, has been making some good flights (average duration 40 secs.). This member has also had out two new tractors, which as yet only do 20 secs. Other small tractors have been flown by Messrs. Westwood, Chinnery (2), Nicholls and Brunton. The latter has had some good flights with a twin-propeller floating tail mono. A small 3-oz. racing biplane has been successfully flown by Mr. Nicholls and an all-metal mono. by Mr. Clark. Mr. Hatful only member with a hydro. At Burnham-on-Crouch Mr. Rippon's large (20-oz.) mono. has been much admired. Besides giving a good account of itself on Blackheath, Mr. Chinnery's large tractor has been busy on Hilly Fields, where 200-ft. glides were obtained. Mr. Peters' mono. (15-oz.) has made similar glides on the Riddlesdowns. This member also been flying tractor biplane with very flexible tips. R.o.g. "A" brought out by Mr. Dixon, average duration 35 secs., it being rather handicapped with square-section rubber. He has also been experimenting with kites, which is rather an untouched field with the S.E.M.A.C. Considerable amusement has been created by Mr. Jones' 3-oz. twin-prop. mono., which now performs M. Pegoud's famous stunt of flying upside down, which it does for about 50 yds. The programme for the coming winter is now in course of preparation, and particulars will be announced later.

Stony Stratford and District Kite and Model Ae.C. (OLD STRATFORD).

Monthly Report.—Topics for the last two meetings have been "Propellers and "Model Types or Fuselage Design." An attempt to start the ball rolling in the revised record performance classes was made by the secretary, Mr. O. Hamilton, Jun., whose flight of 122 yards with a single-screw machine was passed at the last meeting in the single-screw hand launched models class No. 2a. Mr. Brown's attempt on the general record has also been filed. For an open kite competition on Sept. 27th, at the Wolverton Recreation Ground, by permission of the Wolverton Parish Council, 11 entries were received. Five kites were sent up at the judge's signal and the result was as follows:—Mr. E. Brown, 1st, 98 marks; E. Brown, 95 marks; 3rd, Mr. T. A. Moore, 92 marks. The competition was open to a radius of 20 miles and this only produced two entries outside club members.

Windsor Model and Gliding Club (10, ALMA RD., WINDSOR).—*Monthly Report.*—On Sept. 6th, the monthly competition for the members' challenge cup took place—it was won by Mr. Rogers. It will be remembered that the competition for Sept. was for tractor biplanes. The meeting was one of the most successful ever held, a decided tribute to the effect of tractor design. This month's competition will take place to-day in the Home Park. The conditions are the longest flight measured in a straight line, for any type of tractor, any weight. A fine turn out is promised. The club will start gliding in two weeks' time. Almost every little detail has been finished and some fine sport is anticipated. After one or two meetings in the Great Park the machine will be taken



Testing the soaring capabilities of the Windsor Aero Club glider.

to Bourne End, near Maidenhead, where, owing to the presence of a splendid hill, some fine free gliding seems possible. The club have to acknowledge a very useful gift from Mr. L. Hughes, of Maidenhead, now a member, which has taken the form of a pair of aero wheels 15-in. diameter. A feature this winter will be the club lectures organised by Mr. S. Camm, who will inaugurate the series, with a lecture on Propellers, their design and construction, with practical demonstrations. The scale Sopwith waterplane, which is being made by Messrs. S. Camm and H. Dellar is nearing completion. It will be exhibited at the *Model Engineer* Exhibition. Mr. Rogers is making a model 6 ft. span, rubber driven; this will also be exhibited. It will be seen from the foregoing that interest is not lagging at Windsor, and it is hoped that our ambition, the building of a successful full-size power machine, will not prove beyond attainment.

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AIRSHIP NEWS.

The "Astra-Torres" Taken Over.

HAVING satisfactorily completed a 6 hours' duration test last Saturday it is understood that the "Astra-Torres" has been accepted by the Admiralty and now forms part of the equipment of the Naval Wing of the Royal Flying Corps. On this last trial trip the vessel, with M. Roussel of the Astra Co. in charge, and Capt. Masterman and Lieut. Usborne as well as two mechanics on board, left Farnborough at 1.30 a.m. and followed the lights along the railway to Portsmouth, which was reached in about an hour. After continuing for a little way until she was over the Isle of Wight a turn was made and the south coast followed to Bournemouth, over which the airship was manœuvred for about half-an-hour. She then went further along to Weymouth and Portland, and as the dawn was breaking the homeward journey was begun. Farnborough was again reached without incident a few minutes after 8, so that the journey of about 280 miles had occupied just under 7 hours.

Speed Trials with "Conte."

ON Friday morning of last week, the new Astra dirigible "Conte" completed her trials in the presence of representatives of the French War Office. In the morning a speed trial was held over the Villacoublay-Bagnolet course, and the average speed was returned 65·3 kiloms. an hour. In the afternoon, an altitude test was carried out, but the height attained was not disclosed.

A Long Voyage by "Fleurus."

ON the completion of her work in connection with the manœuvres the French army airship returned from Pau to Paris, on the 26th ult., with Lieut. Hennequin in charge and two lieutenants and four mechanics on board, a start was made from Pau at 2.45 a.m. and after passing Blois at 2.55 p.m., the airship reached her headquarters at St. Cyr at 6.20 p.m., the journey of 650 kiloms. having occupied 15½ hours. Two days previously the airship made a three hours' tour over the neighbourhood of Pau.

750 kilom. Cruise by Italian Airship.

WITH eleven persons on board the Italian military dirigible "M 2," on the 23rd ult., covered the circuit Ferrare–Turin–Milan–Venice–Ferrare, a distance of about 750 kiloms.

CORRESPONDENCE.

[1796] On page 1067 in FLIGHT of September 27th, it is stated that the making of the top pylon in M. Pegoud's Blériot monoplane so as to reduce the stress on the top bracing wires is "a very natural precaution in a machine that flies, so to speak, habitually on its back, and in which the top wires frequently take all the weight of the machine in the air." But when the machine is inverted the force that sustains the machine in normal flight under these circumstances acts downwards, and so tends to drag the machine downwards so that the weight is still on the bottom bracing wires (that is, those that are the bottom wires in normal flight), and the top wires have little, if any more, weight to carry than under ordinary circumstances.

And in the Diagrams 1 and 3 on pp. 1066 and 1067, the angle at which the machine is flying, or rather gliding, on its back is very gradual, while in reality the path of flight must be much steeper owing to the downward pull of the wings that has just been pointed out.

Ely. ALFRED M. COATE.

[Our correspondent is under an entire misapprehension on the subject. The earth's attraction is trying to pull the machine down at the accelerated rate of 32·2 ft./sec./sec. This is resisted by the wing surfaces whether they are upside down or right way up.—ED.]

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NEW COMPANIES REGISTERED.

Engines, Ltd., 99, Highlever Road, N. Kensington, W.—Capital £10,000, in £1 shares. Directors, B. A. Kupferberg, S. E. Barron, A. H. Pickett, C. H. Culliford, T. W. Tamplin, and O. W. J. Watson.

International Aviation and Motor Co., Ltd., 173, Shaftesbury Avenue, W.C.—Capital £75,000, in £1 shares (50,000 pref.). Acquiring the businesses of Mathis Motors, Ltd., Worthington Bros., Ltd., and the Hythe Motor Cab Co., Ltd. First directors, Sir Geo. W. Kekewich, K.C.B., D.C.L., J.P., Norman Lee, Capt. C. Weiner, and Albert E. White (technical director).

Provincial Aviation Co., Ltd., 15, Parliament Street, Hull.—Capital £3,000, in £1 shares. First directors. A. J. Atkinson and C. H. A. Wilson.

Safety Aeroplane (Parent) Synd., Ltd., 6, Broad Street Place, E.C.—Capital £10,000, in 9,000 "A" shares of £1 each and 20,000 "B" shares of 1s. each. Directors, J. Neale and H. B. Brandt.

Statax Engine Co., Ltd.—Capital £15,000, in £1 shares. Engineers, manufacturers and patentees of aeroplanes, waterplanes, and flying machines and engines of all kinds, &c. Under agreement with G. W. Edgelow. C. E. Castellan permanent director and chairman.

Varioplane Co., Ltd., 34-6, Gresham Street, E.C.—Capital £16,000, in £500 shares. Acquiring from A. A. Holle certain rights, patents, and protections relating to aerial conveyances. First directors, A. A. Holle, G. J. L. Nicholson, and G. P. M. Van Weel.

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Aeronautical Patent Published.

Applied for in 1912.

Published October 2nd, 1913.

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